PC1XX-FA TO PC500

TECHNICAL INFORMATION

FOR INTERNAL USE ONLY

EP-PC1XX-TI-P
1 OF 1 APR 1988
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digital
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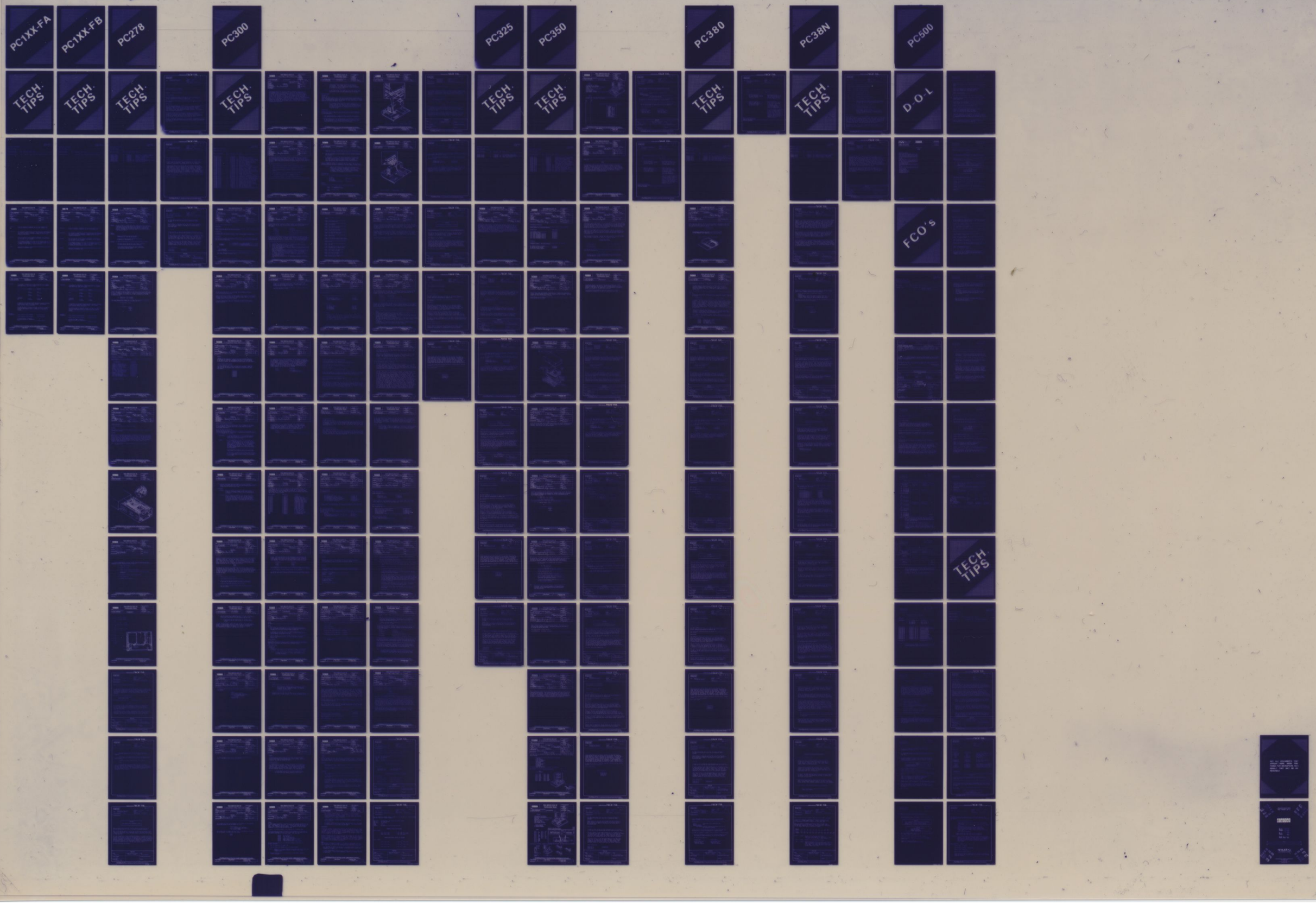

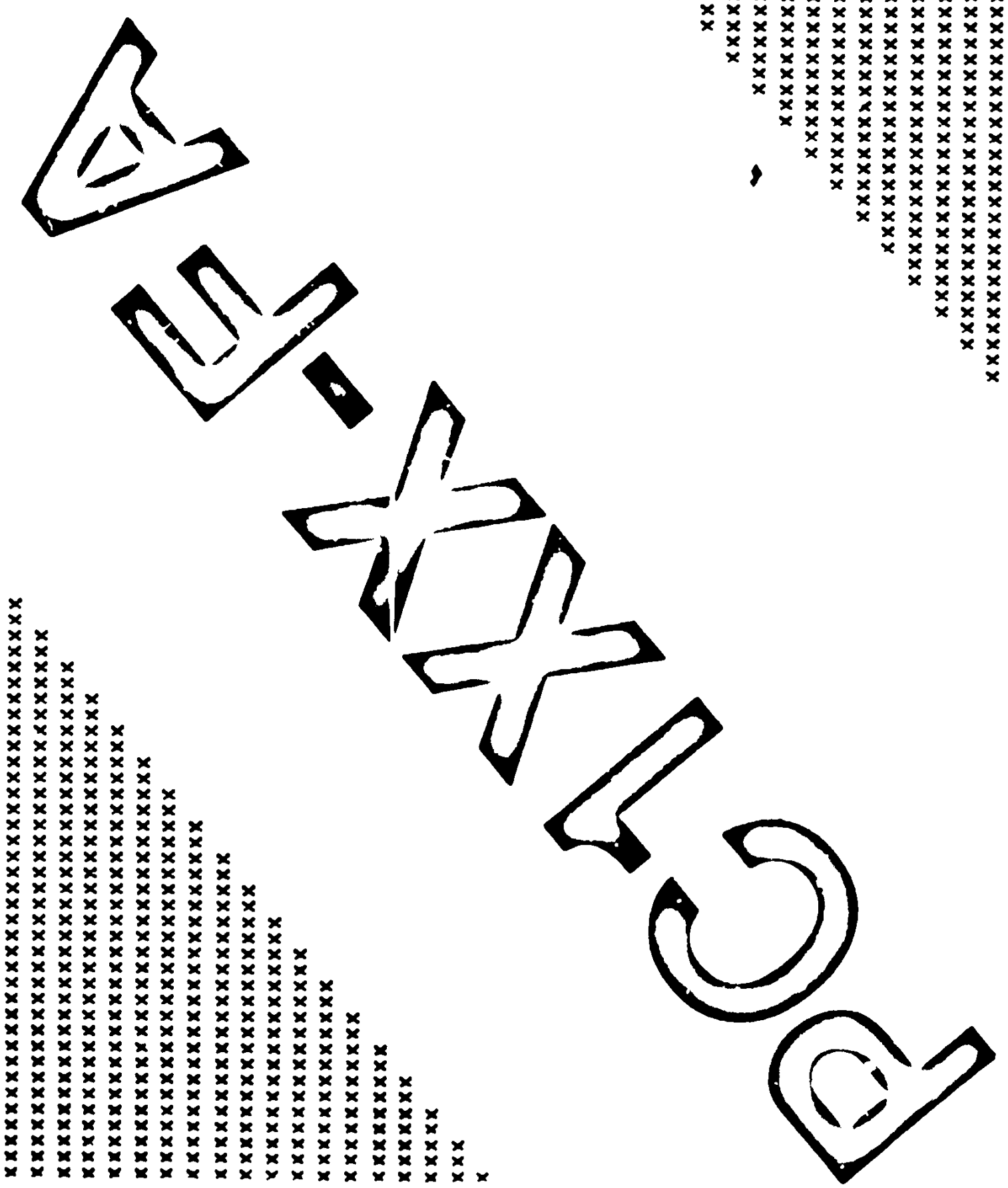
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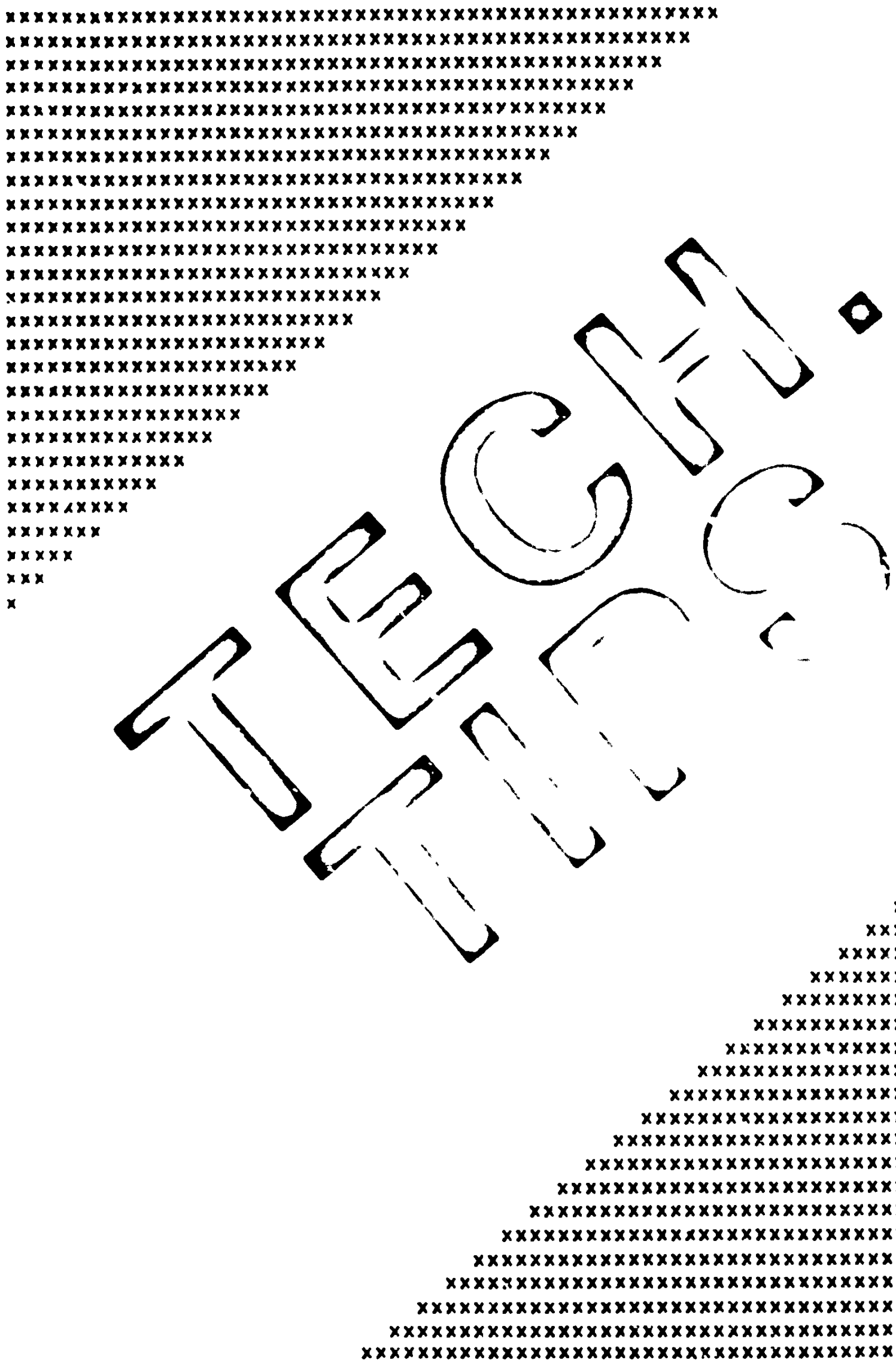

24-Aug-1987
PC1XXFA-INDEX.A
REV A

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC1XX-FA-TT-01	A	6-Nov-84	356	PC100 tech char set caution

digital	FIELD SERVICE TECH TIP					Option Designator PC1XX-FA
	☐ 12 Bit	☐ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category Personal Computers
Title PC100 TECHNICAL CHARACTER SET CAUTION						Tech Tip No. PC1XX-FA-TT-01
Processor Applicability P C 1 0 0		Cross Reference PC100-TT-06 PC1XX-FB-TT-01			Tec Tip Rev A	Page 1 of 2
Author LARRY GRUENOLD		Mgr./Supv Approval s/Gerald Tebo				
Location LJ02	Mail Stop H11				Date NOVEMBER 1, 1984	
CSSE Approval s/John Fairchild					Date 11-6-84	
FSPSG APPROVAL					Date	

PRODUCTS: PC1XX-FA TECHNICAL CHARACTER SET FOR THE RAINBOW 100A
PC1XX-FB TECHNICAL CHARACTER SET FOR THE RAINBOW 100B

SITUATION: THE TECHNICAL CHARACTER SET OPTIONS HAVE BEEN INTRODUCED FOR THE RAINBOW PERSONAL COMPUTERS. THESE OPTIONS ARE FIRMWARE ROMS THAT REPLACE THE STANDARD FIRMWARE ROM SET ON THE RAINBOW SYSTEM MODULE.

PROBLEM: WHEN THE RAINBOW SYSTEM MODULE IS REPLACED, THIS ROM SET MUST BE MOVED TO THE CUSTOMER'S NEW MODULE, OR THE OPTION WILL BE LOST TO THE CUSTOMER.

THE STANDARD FIRMWARE ROMS FROM THE NEW MODULE MUST BE MOVED TO THE DEFECTIVE MODULE, SO THAT IT IS COMPLETE AND IN STANDARD CONFIGURATION. IF THIS IS NOT DONE, CREDIT CANNOT BE ISSUED FOR THE RETURNED DEFECTIVE MODULE.

ACTION: LOOK FOR THE SPECIAL IDENTIFICATION ROM MARKINGS AND SYSTEM MARKINGS AS DESCRIBED NEXT.

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For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2.

MARKINGS: THE TECHNICAL CHARACTER SET ROMS ARE MARKED WITH SPECIAL FLUORESCENT, OR "DAY GLOW" COLORED DOTS 3/8" IN DIAMETER. THESE ARE COLOR CODED AS FOLLOWS:

	PC100-A	PC100-B
ROM 0	GREEN 23-360E4	RED 23-073E5
ROM 1	GREEN 23-361E4	RED 23-074E5
CHARACTER GENERATOR ROM	YELLOW 23-063E3	YELLOW 23-063E3

IN ADDITION, THE RAINBOW SYSTEM BOX HAS A BRIGHTLY COLORED STICKER PLACED ABOVE THE SERIAL NUMBER. THE STICKER READS "SPECIAL OPTION INSTALLED".

THE SPECIAL OPTION INSTALLED STICKER IS PART OF A PERSONAL COMPUTER PROGRAM TO IDENTIFY SYSTEMS THAT HAVE OPTIONS INSTALLED THAT REQUIRE SPECIAL ATTENTION OF ONE SORT OR ANOTHER.

DOCUMENT REFERENCES:

POCKET SERVICE GUIDE ADDENDUM	EK-PC100-PS-CN1
POCKET SERVICE GUIDE ADDENDUM	EK-PC100-PS-CN2
RAINBOW TECHNICAL CHARACTER SET INSTALLATION AND PROGRAMMERS GUIDE	EK-RBTCS-IN-001

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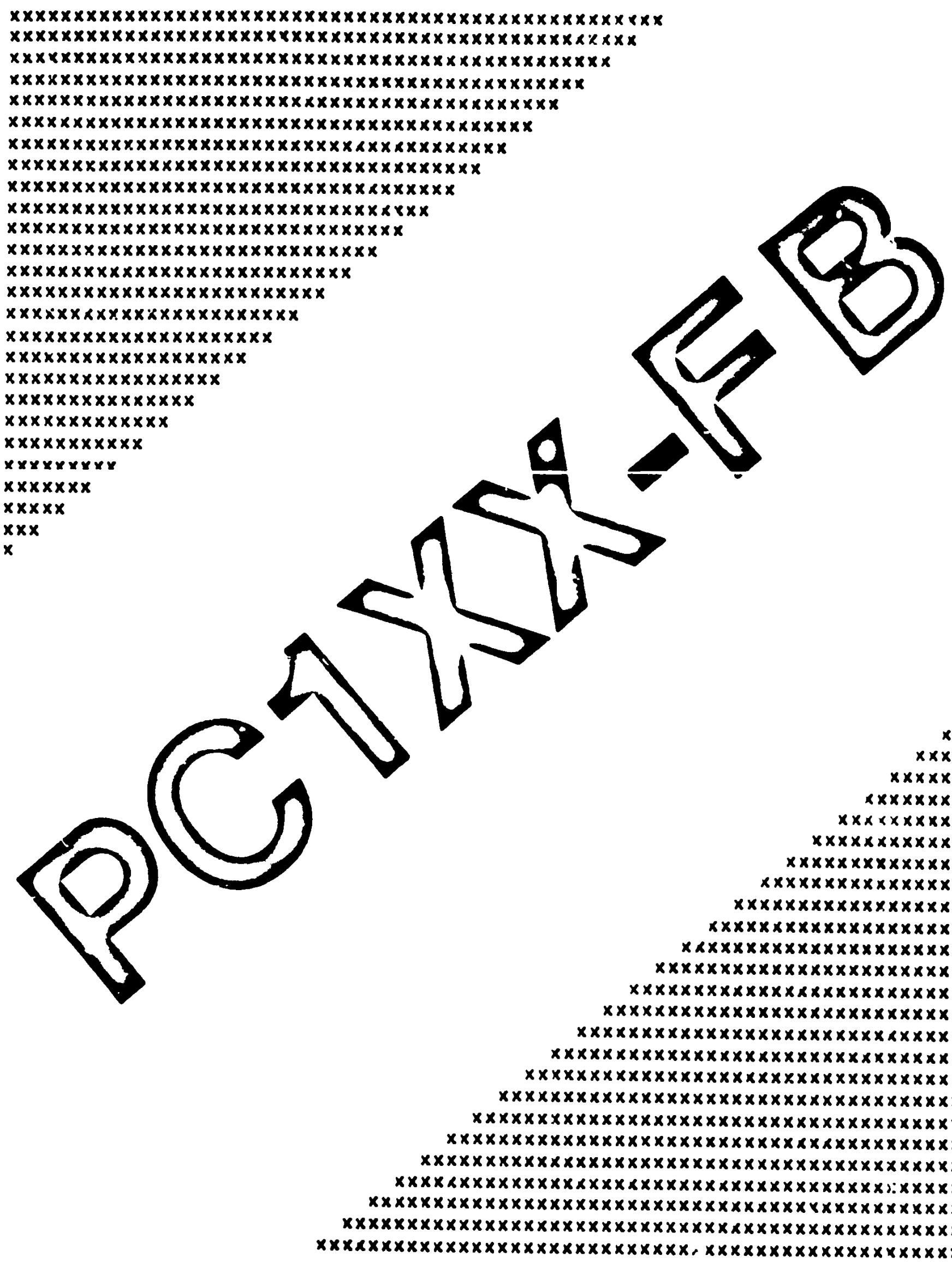
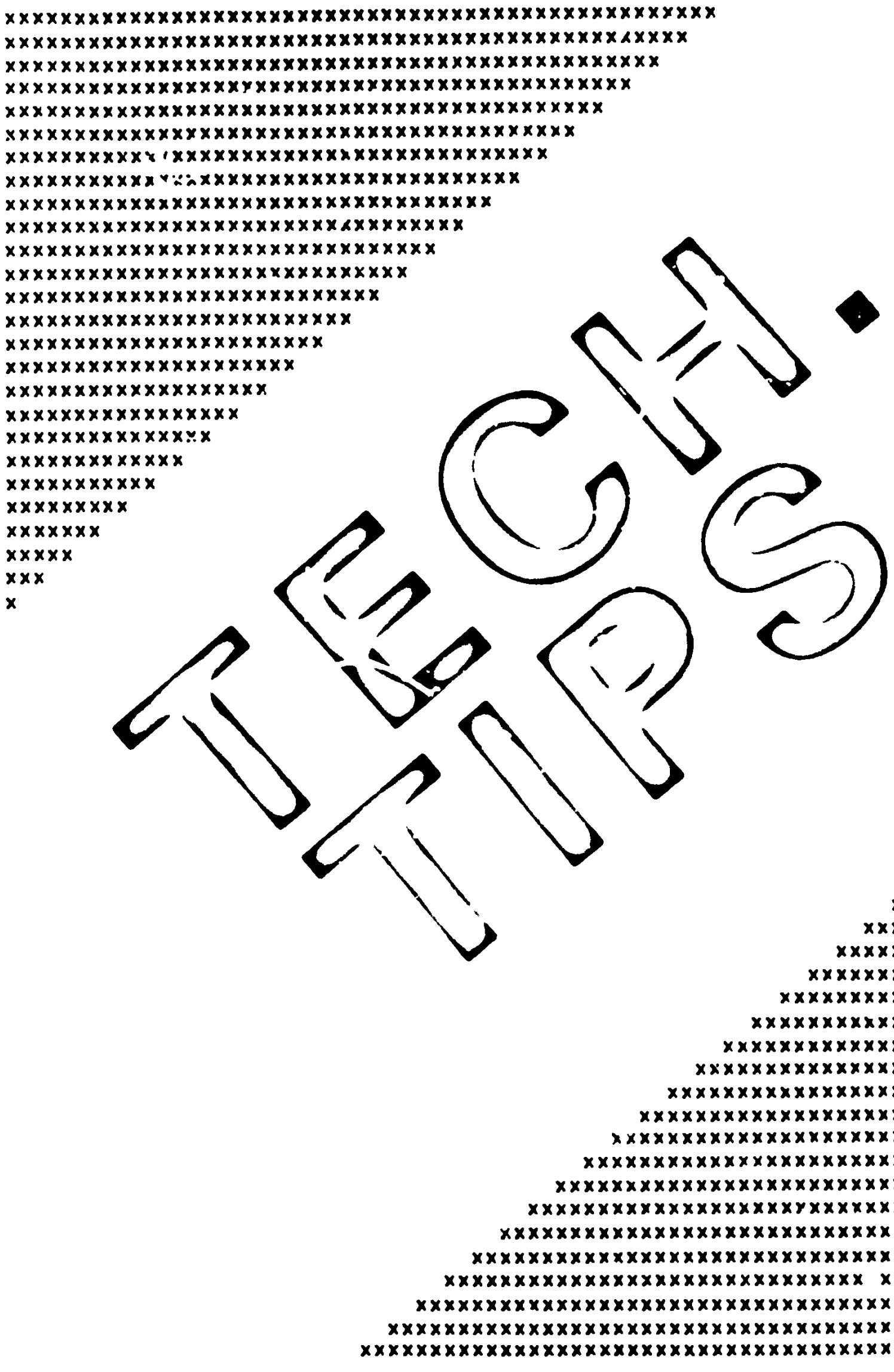

PC1X-FB


TECH
TIPS

24-Aug-1987
PC1XXFB-INDEX.A
REV A

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC1XX-FB-TT-01	A	6-Nov-84	356	PC100 tech char set caution

PC1XX-FB-TT-1

digital	FIELD SERVICE TECH TIP					Option Designator PC1XX-FB
	☐ 12 BIT	☐ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category Personal Computers
Title PC100 TECHNICAL CHARACTER SET CAUTION						Tech Tip No. PC1XX-FB-TT-01
Processor Applicability P C 1 0 0		Cross Reference PC100-TT-06 PC1XX-FA-TT-01				Tech Tip Rev A / Page 1 of 2
Author LARRY GRISWOLD		Mgr /Supv Approval s/Gerald Tebo				
Location LJ02	Mail Stop H11					Date NOVEMBER 1, 1984
CSSE Approval s/John Fairchild						Date 11-6-84
FSPSG APPROVAL						Date

PRODUCTS: PC1XX-FA TECHNICAL CHARACTER SET FOR THE RAINBOW 100A
PC1XX-FB TECHNICAL CHARACTER SET FOR THE RAINBOW 100B

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MARKINGS: THE TECHNICAL CHARACTER SET ROMS ARE MARKED WITH SPECIAL FLUORESCENT, OR "DAY GLOW" COLORED DOTS 3/8" IN DIAMETER. THESE ARE COLOR CODED AS FOLLOWS:

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ROM 1	GREEN 23-361E4	RED 23-074E5
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DOCUMENT REFERENCES:

POCKET SERVICE GUIDE ADDENDUM	EK-PC 00-PS-CN1
POCKET SERVICE GUIDE ADDENDUM	EK-PC10 -PS-CN2
RAINBOW TECHNICAL CHARACTER SET INSTALLATION AND PROGRAMMERS GUIDE	EK-RBTCS-IN-001

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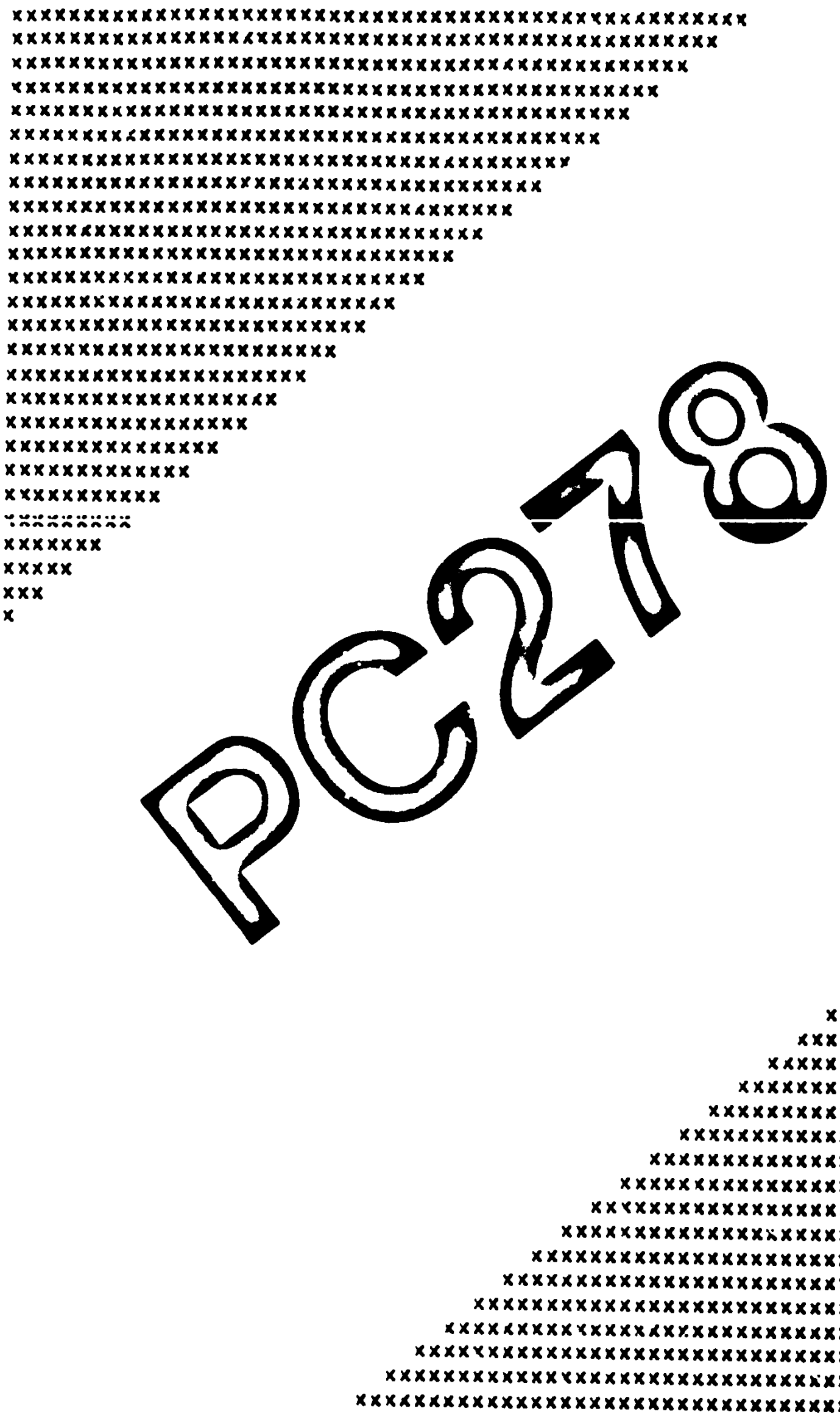
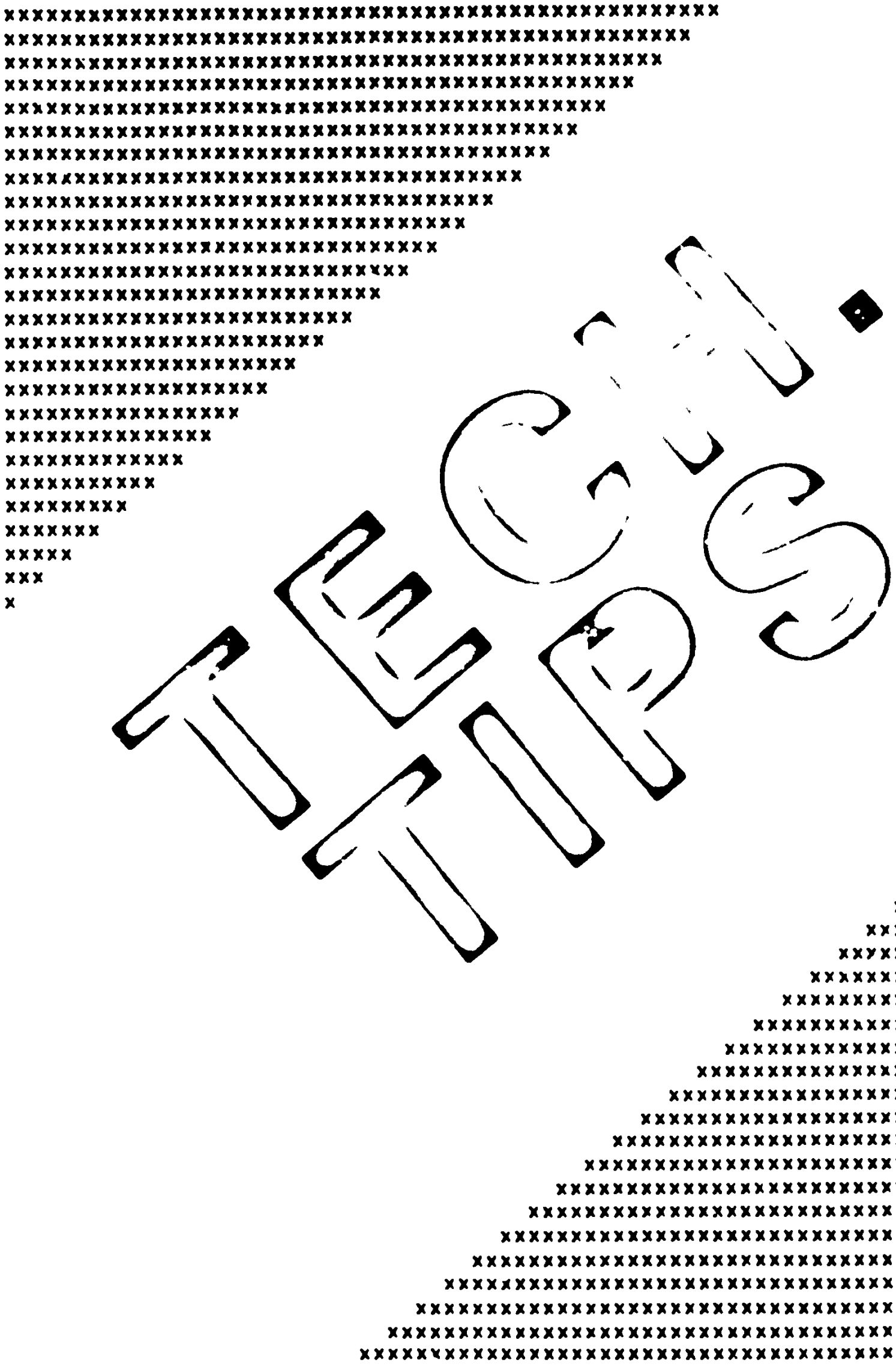
PC1XX-FB TT-3


PC278


THE END IS NEAR

25-Aug-1987
PC278-INDEX.A
REV A

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC278--TT-01	A	10-Feb-83		Long rivets may damage DECmate II
-PC278--TT-02	A	10-Feb-83		Printer port loopback connector
-PC278--TT-03	A	8-Apr-83		DECmate II documentation
-PC278--TT-04	A	12-May-83		RX50 ball follower out of track
-PC278--TT-05	A	2-Aug-83		DC voltage checks
-PC278--TT-06	A	13-Feb-86	417	Non DEC authorized add-on
-PC278--TT-07	A	6-Oct-86	452	Servicing units/locking key switch
-PC278--TT-08	A	12-Mar-87	473	VR241 cable holder

	FIELD SERVICE TECH TIP					Option Designator PC278
digital	☒ 12 Bit	☐ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title: LONG RIVETS MAY CAUSE DAMAGE TO DECMATE II OPTION MODULES						Tech Tip No. PC278-TT-1
Processor Applicability	Cross Reference: N/A					Tech Tip Rev: A / Page: 1 of 1
Author: CARL CLINE	Mgr/Supv Approval					
Location: MILL/MAYNARD	Mail Stop: MLO5-2/T53					Date: 1-27-83
CSSE Approval	GARY HOUDESHELL					Date: 2/2/83
PSG Approval	EDWARD KAY					Date: 2/10/83

PROBLEM: THE EARLY DECMATE II SYSTEMS (UNDER SERIAL NUMBER 5000) HAVE A POTENTIAL PROBLEM WITH THE RIVETS THAT MOUNT THE RX SLIDES ONTO THE BA25 SHEET METAL. IF ANY OPTION OTHER THAN THE PC27X-AA (CP/M SOFTCARD) WAS INSTALLED THE RIVETS MAY INTERFERE WITH THE OPTION MODULE WHEN IT IS INSTALLED INTO THE BA25. THE RESULT COULD BE PHYSICAL DAMAGE TO THE MODULE OR SHORTING OF THE MODULE TO GROUND.

UNITS AFFECTED:

- o DECMATE II SYSTEM WITH SERIAL NUMBER UNDER 5000. (APPROXIMATELY 100 PROTO AND SEED SYSTEMS)
- o INITIAL BA25'S SENT FROM FIELD SERVICE STOCK AS PART OF SERVICE KIT, APPROXIMATELY 300.

SOLUTION: THE DEGREE OF INTERFERENCE WILL DICTATE WHAT ACTION SHOULD BE TAKEN.

1. THE RIVETS ARE TOO LONG AND WILL CAUSE DAMAGE TO EITHER OF THE OPTION MODULES THAN THE BA25 MUST BE REPLACED.

2. IF THE RIVETS SLIGHTLY TOUCH OR ARE CLOSE TO TOUCHING, THAN A PIECE OF INSULATING MATERIAL CAN BE PLACED BETWEEN THE OPTION MODULE AND THE RIVETS.

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digital	FIELD SERVICE TECH TIP					Option Designator PC278
	☒ 12 Bit	☐ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title PRINTER PORT LOOPBACK CONNECTOR						Tech Tip No PC278-TT-2
Processor Applicability P | C | | 2 | 7 | 8 | |		Cross Reference PC350-TT- 4				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr /Supv. Approval Carl Olsen			
Location MAYNARD		Mail Stop MLO5-2/T53				Date 2-1-83
CSSE Approval GARY HOUDESHELL						Date 2/3/83
PSG Approval EDWARD KAY						Date 2/10/83

A PRINTER PORT EXTERNAL LOOPBACK CONNECTOR IS NOT YET IN PLACE FOR PC350 AND PC278. WHEN IT IS AVAILABLE, IT WILL BE ADDED TO THE FSL (WITH DEC PART NUMBER) AND FOLLOWED BY A TECH TIP ANNOUNCING IT'S AVAILABILITY. EXTERNAL LOOPBACK MAY BE PERFORMED IN THE MEANTIME BY JUMPERING THE FOLLOWING PINS AT THE 9 PIN CONNECTOR AT THE REAR OF EITHER SYSTEM BOX:

1) JUMPER PINS 2 AND 3 TOGETHER
2) JUMPER PINS 5 AND 6 TOGETHER

IF IT IS DESIRED TO BUILD A PRINTER PORT LOOPBACK, ORDER ANY ONE OF THE FOLLOWING 9 PIN FEMALE CONNECTORS AND JUMPER PINS 2 TO 3 AND PINS 5 TO 6:

1) TRW PART NUMBER - DEM 9S

OR

2) AMP PART NUMBER - 205734-1
205734-2
205734-3
OR
205734-4

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digital	FIELD SERVICE TECH TIP					Option Designator PC278
	☒ 12 Bit	☐ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title DECMATE II DOCUMENTATION						Tech Tip No. PC278-TT-3
Processor Applicability P C 2 7 8		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author PHIL TUFLAND		Mgr/Supv. Approval				
Location MAYNARD/MILL		Mail Stop MK0-2/T53				Date MARCH 27, 1983
CSSE Approval CARL CLINE						Date 05-Apr-83
PSG Approval ED KAY						Date 8 Apr 83

MAINTENANCE DOCUMENTATION

THE FOLLOWING IS A LIST OF DOCUMENTATION FOR THE DECMATE II THAT WILL BE AVAILABLE THROUGH PRINTING AND CIRCULATION SERVICES:

	DOCUMENT TITLE	ORDER NUMBER
	DECMATE II SYSTEMS OWNERS GUIDE	EK-DECM2-OM-001
	DECMATE II INSTALLATION GUIDE	EK-DECM2-IM-001
	DECMATE II TECHNICAL DESCRIPTION	EK-DECM2-TD-001
	DECMATE II DOCUMENTATION MAP	EK-DM2DM-RC-001
	DECMATE II FLOOR STAND INSTALL. GUIDE	EK-DECRB-IN-001
*	DECMATE II/PC278 IPB	EK-CB278-IP-001
	RX01/RX02 OPTION INSTALLATION GUIDE	EK-DM212-IN-001
	CP/M OPTION INSTALLATION GUIDE	EK-DM2CP-IN-001
	RX50 DRIVE INSTALLATION GUIDE	EK-DM250-IN-001
	HARDWARE POCKET SERVICE GUIDE	EK-DECM2-PS-001
*	DECMATE II REPAIR GUIDE	EK-DECM2-AM-001
	PC278 MAINTENANCE PRINT SET	MP-01492-00
	LK201 FIELD MAINTENANCE PRINT SET	MP-01395-00
	VR201 FIELD MAINTENANCE PRINT SET	MP-01410-00

* AVAILABLE JUNE 1983

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PC278-TT-4

digital	FIELD SERVICE TECH TIP					Option Designator PC27A
	X 12 BIT	☐ 16 BIT	☐ 18 BIT	☐ 32 BIT	36 BIT	Category TERMINALS
Title: RX50 BALL FOLLOWER COMING OUT OF TRACK						Tech Tip No PC27A TT-4
Processor Applicability: P C 2 7 8		Cross Reference: N/A				Tech Tip Rev A / Page 1 of 2
Author: PHIL TURLAND			Mgr/Supv Approval			
Location: MAYNARD		Mail Stop: MK05-2/T53				Date: MAY 9, 1983
CSSE Approval: CARL CLINE						Date: 10-MAY-83
PSG Approval: EDWARD KAY						Date: May 12, 1983

PROBLEM DESCRIPTION:

SYSTEM PASSES SELF TEST BUT WILL NOT LOAD SOFTWARE.

SYMPTOMS:

WHEN ATTEMPTING TO BOOT THE SYSTEM SOFTWARE A DIAGRAM OF A DISKETTE IS CONSTANTLY DISPLAYED (NOT FLASHING).

SOLUTION:

WHEN THE PC'S AND THE RX50'S ARE SHIPPED, A CARRIAGE RESTRAINT CARD IS PLACED INSIDE THE TOP DRIVE. IF THE CARD HAS BEEN PUSHED IN TOO FAR, OR IF THE HEAD LOAD ARM WAS NOT AT THE END OF THE LEAD SCREW, THERE IS THE POSSIBILITY OF THE HEAD LOAD ARM BEING PUSHED TO THE END OF THE LEAD SCREW, CAUSING THE BALL FOLLOWER TO RIDE ON THE END OF THE LEAD SCREW. THIS CAN BE CORRECTED BY REMOVING THE SHIELD ASSEMBLY FROM THE RX50 DRIVE AND PULLING THE HEAD LOAD ARM AWAY FROM THE STEPPER MOTOR, THUS POSITIONING THE BALL FOLLOWER ARM BACK IN THE TRACK ON THE LEAD SCREW. THERE IS AN ECO PENDING TO CORRECT THIS PROBLEM.

NOTE: IT IS NOT NECESSARY TO TOTALLY DISASSEMBLE THE RX50 DRIVE, JUST REMOVE THE SHIELD.

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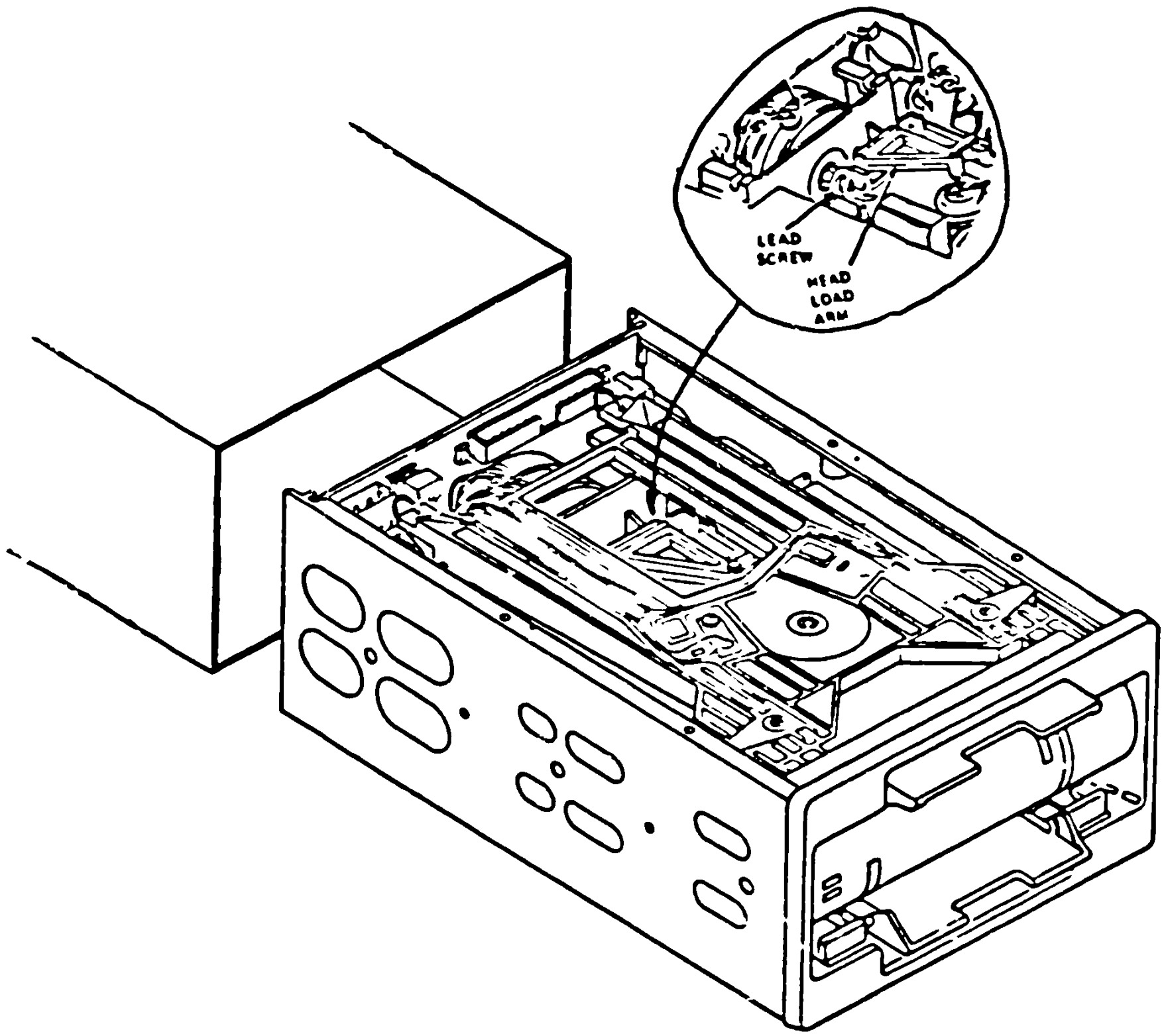
digital	FIELD SERVICE TECH TIP Continuation Sheet	Option Designator PC278 Category SYSTEMS
Title RX50 BALL FOLLOWER COMMING OUT OF TRACK		Tech Tip No PC278-TT-4
Processor Applicability P C 2 7 8	Cross Reference N/A	Tech Tip Rev A Page - of 2



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digital	FIELD SERVICE TECH TIP					Option Designator PC278
	☒ 12 BIT	☐ 16 BIT	☐ 18 BIT	32 BIT	36 BIT	Category COMPUTERS
Title DC VOLTAGE CHECKS						Tech Tip No PC278-TT-5
Processor Applicability P | C | 2 | 7 | 8 | | |	Cross Reference PC100-TT-1					Tech Tip Rev A / Page 1 of 2
Author MICHAEL DUBF			Mgr Supv Approval John Hess			
Location ATLANTA, GA	Mail Stop IPO					Date 6/27/83
CSSE Approval						Date 8/2/83
PSG Approval						Date

THE DC VOLTAGES FOR THE PC278/PC100 ARE NOT LISTED IN THEIR RESPECTIVE POCKET SERVICE GUIDES. LISTED BELOW IS THE VOLTAGE CHECK PROCEDURE AND PIN LOCATIONS ON THE H7842-A.

1 - POWER DOWN SYSTEM.

2 - REMOVE TOP COVER.

3 - REMOVE SYSTEM MODULE POWER CABLE.

4 - SLIDE PLASTIC PROTECTIVE COVER OFF ONE END OF CABLE CONNECTOR.

5 - RE-INSTALL SYSTEM MODULE POWER CABLE.

6 - TURN SYSTEM ON.

7 - PERFORM VOLTAGE CHECKS.

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digital	FIELD SERVICE TECH TIP	Option Designator PC278	
	Continuation Sheet	Category COMPUTERS	
Title DC VOLTAGE CHECKS		Tech Tip No PC278-TT-5	
Processor Applicability P C 2 7 8	Cross Reference PC1ØØ-TT-1	Tech Tip Rev A	Page 2 of 2

```
1  ---------- ACOK  SIGNAL
2  ---------- VBIAS SIGNAL
3  - KEY
4  ---------- -12V   +/-.84V
5  ----+----- +12.1V  +/-.6V
       |
6  ----+
7  ----+----- +5.1V  +/-.25V
       |
8  ----+
       |
9  ----+
       |
10 ----+
       |
11 ----+
       |
12 ----+
       |
13 ----+
       |
     --+--
      -+-
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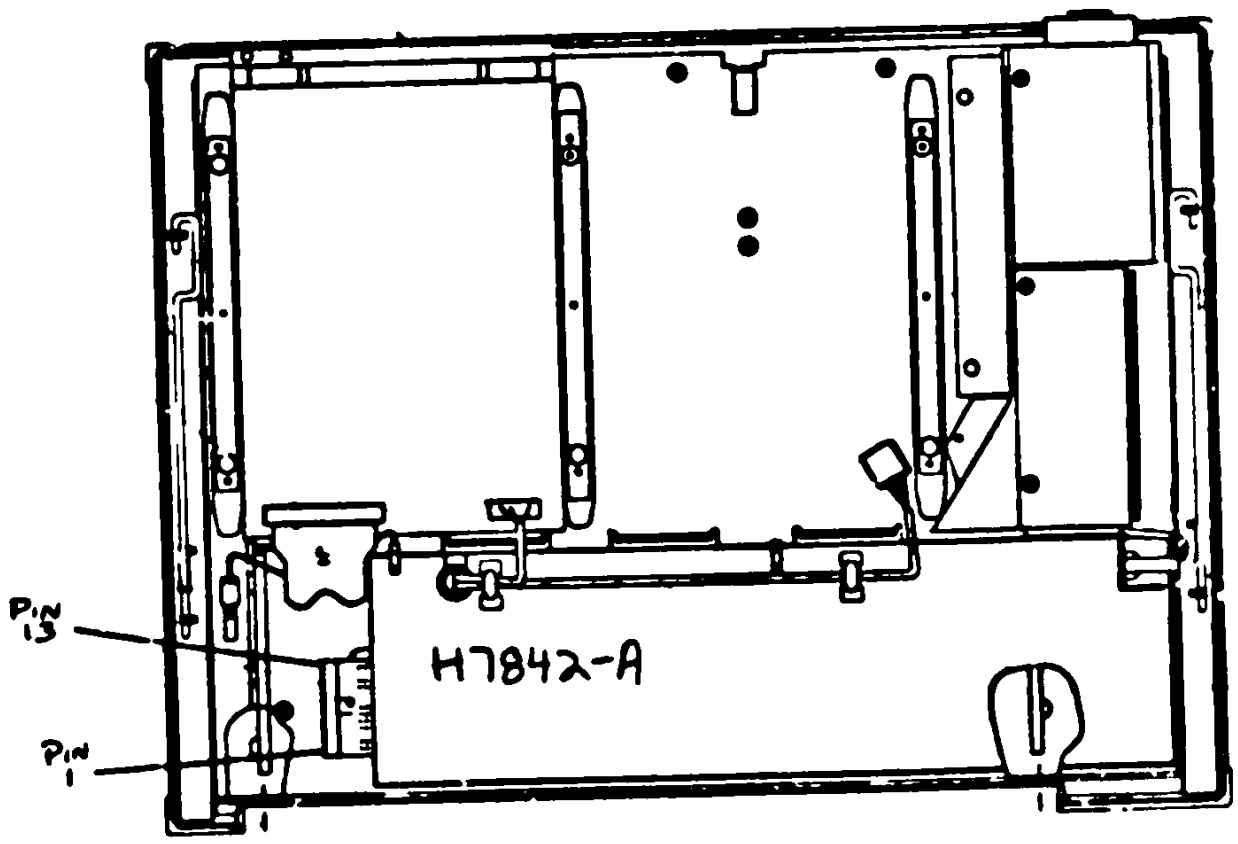

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Field Service **TECH TIP**

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Category Computers Rev A

Title Non DEC Authorized Add-on

Option PC278

Cross Reference N/A

TECH TIP No PC278-TT-06

Problem/Solution

NON-DEC AUTHORIZED ADD-ON KEYSWITCH

It has been discovered through investigation that a security key switch that is advertised for use on DEC's personal computers does not meet the primary power disconnect device requirements of that application. Additionally, there may be certain safety risks involved in installation, use and service where this switch is involved.

The key switch is manufactured by:

PC Security Enterprises
Newton Centre, Ma.

The product trade name is: Power Lock 1000

CAUTION

This product is not a DEC authorized add-on part and is not to be installed by DEC field personnel. There are no exceptions to this. The following is the position of the corporation and customers should be discouraged from using this product if inquiries are made.

"The product is not a Digital authorized add-on part. The product does not meet Digital's power requirements for a primary power disconnect device. Use of this product in Digital's personal computers may result in failure of the PC and/or the switch."

Approvals		
Author Carol Hamblin	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Carol Hamblin
Author's Manager Greg Nealand		Field Service Product Safety
Release Date 13 February 1986		Revision A

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PC 278-TT-9

Category Computers Rev A

Title Non DEC Authorized Add-on

Option PC278

TECH TIP No. PC278-TT-06

The Fan Assembly P/N 70-19572-00 which contains a Power Lock 1000 keyswitch will be the assembly that should be replaced.

For removal and replacement of the Fan Assembly in any of the PC278 family of products refer to the following Pocket Service Guide;

DECMATE II POCKET SERVICE GUIDE EK-DEC42-PS

NOTE:

A Fan Assembly with the Power Lock 1000 keyswitch installed becomes the property of the Customer. The Customer will pay full cost for the replacement Fan Assembly when such Power Lock has been installed. DEC Service Contracts and Warrenties do not cover damage caused by the installation, operation, or malfunction of the switch.

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PC278-TT-10

Title: Servicing Units With Locking Key Switch

Category: Terminals Rev: A

Option: PC278

Cross Reference: N/A

TECH TIP No.: PC278-TT-07

Problem/Solution

```
**********************************************
*                  CAUTION                   *
*                                            *
*  USE CORDSET FOR DISCONNECT DEVICE         *
*                                            *
**********************************************
```

Some customers have purchased the Key Switch manufactured by Pc Security Enterprises for use on the above mentioned products.

When servicing the products which have a Locking Key Switch ,do not rely on the Key Switch as a disconnect device. Use the cordset for a disconnect device to remove AC power before performing any service on these options.

You are obligated to notify affected customers of Digital's concern for safe access and of Digital's Service Policy regarding FRU's which contain this switch. Attached is an addendum which can be re-typed on Digital letterhead and presented to the appropriate representative of affected customers. Such notice should precede new service contracts. For existing contracts, the appropriate customer representative must be notified either by mail or at the next service call.

See also Tech-Tip# PC278-TT-06.

Approvals		
Author Tom Wrenn	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Greg Nealand
Author's Manager S. Hoyt		Field Service Product Safety
Release Date 6 October 1986		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC278-TT-11

Title Servicing Units With Locking Key Switch

Category Terminals Rev A
Option PC278
TECH TIP No. PC278-TT-07

THE FOLLOWING IS AN ADDENDUM:

SUBJECT: PowerLock 1000-RB

Dear Customer:

You have either purchased, installed or made an inquiry to Digital regarding the PowerLock 1000-RB key switch manufactured by P.C. Security Enterprises of Newton, Ma.

The following is Digital's service policy with respect to this key switch.

Background

The PowerLock 1000-RB key switch is not a Digital approved add-on part for Rainbow, DECmate II or Professional model personal computers. This key switch does not meet Digital's power requirements for primary power disconnect devices. The use of this switch in the above personal computer products is a primary power disconnect application.

Use of this key switch in Digital's personal computers may result in failure of the key switch and/or the personal computer. Digital also believes that a risk of personal injury to operator or service personnel may exist in the event of such a failure or during access to service other parts within the unit.

For your continued protection, it is Digital's recommendation that access to any part contained within the unit's enclosure be preceded by removal of the power cord from the AC Power source (typically a wall outlet).

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2.

Category Terminals Rev A

Title Servicing Units With Locking Key Switch

Option PC278

TECH TIP No PC278-TT-07

Digital Service Policy

Digital Field Service will not install this key switch product.

Digital Service Contracts and warranties do not cover, with either labor or materials, damage caused by the installation, operation, maintenance or malfunction of this key switch.

Field replaceable units (FRU's) which have been modified by installation of this key switch are not eligible for exchange under Digital's Service Contracts or warranties. Modified FRU's which fail while under a Digital Service Contract or warranty will be removed by Field Service and left with the customer. They become the property of the customer. A replacement FRU must be purchased by the customer at standard prices. Digital will install the replacement FRU, but will not install the key switch.

If you have questions regarding Digital's service policy, please contact _____.

Very truly yours,

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Field Service TECH TIP

digital™

Category Computers Rev A

Title VR241 Cable Holder

Option PC278

Cross Reference (See below)

TECH TIP No PC278-TT-08

Problem/Solution

The RGB video cable does not stay securely fastened to the back of the monitor resulting in premature cable failure.

Velcro does not hold and cable hangs from BNC connectors. Cable failure is apparent by loss of one or more colors or by a tinted white color if the monitor is being used in monochrome mode.

Solution:

A plastic cable holder has been designed that will attach to the back of the cabinet and securely hold the color cable.

The part number of the cable holder kit is 70-23351-01 and is available from SR17. The kit contains an installation sheet the cable holder and a plastic insert that fits into the housing of the video cable. The insert contains the Digital Logo and was included with the kit for aesthetic purposes.

The cable holder is now being packaged with the RGB video cable that is used with the VR241. However, many monitors already in the Field do not have the cable holder. CSSE recommends that the Field install the cable holders on monitors (VR241's) that do not have the holder installed.

Cross References:

PC100-TT-12
VT241-TT-16
PC325-TT-04
PC350-TT-15
PC380-TT-05

Approvals		
Author Paul Petherick	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Ron Francoeur
Author's Manager Ron Francoeur		Field Service Product Safety
Release Date 12 March 1987		Revision A

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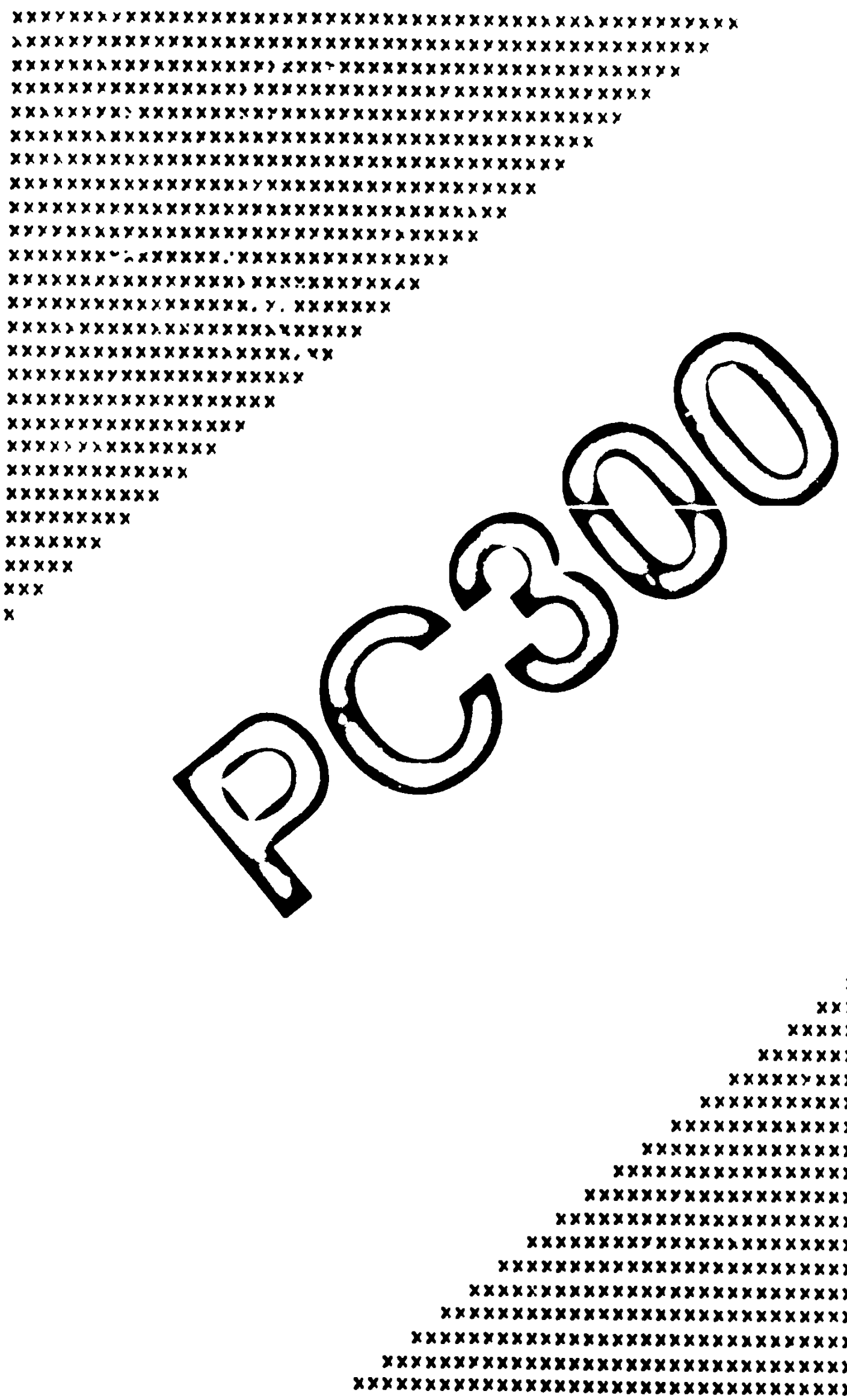
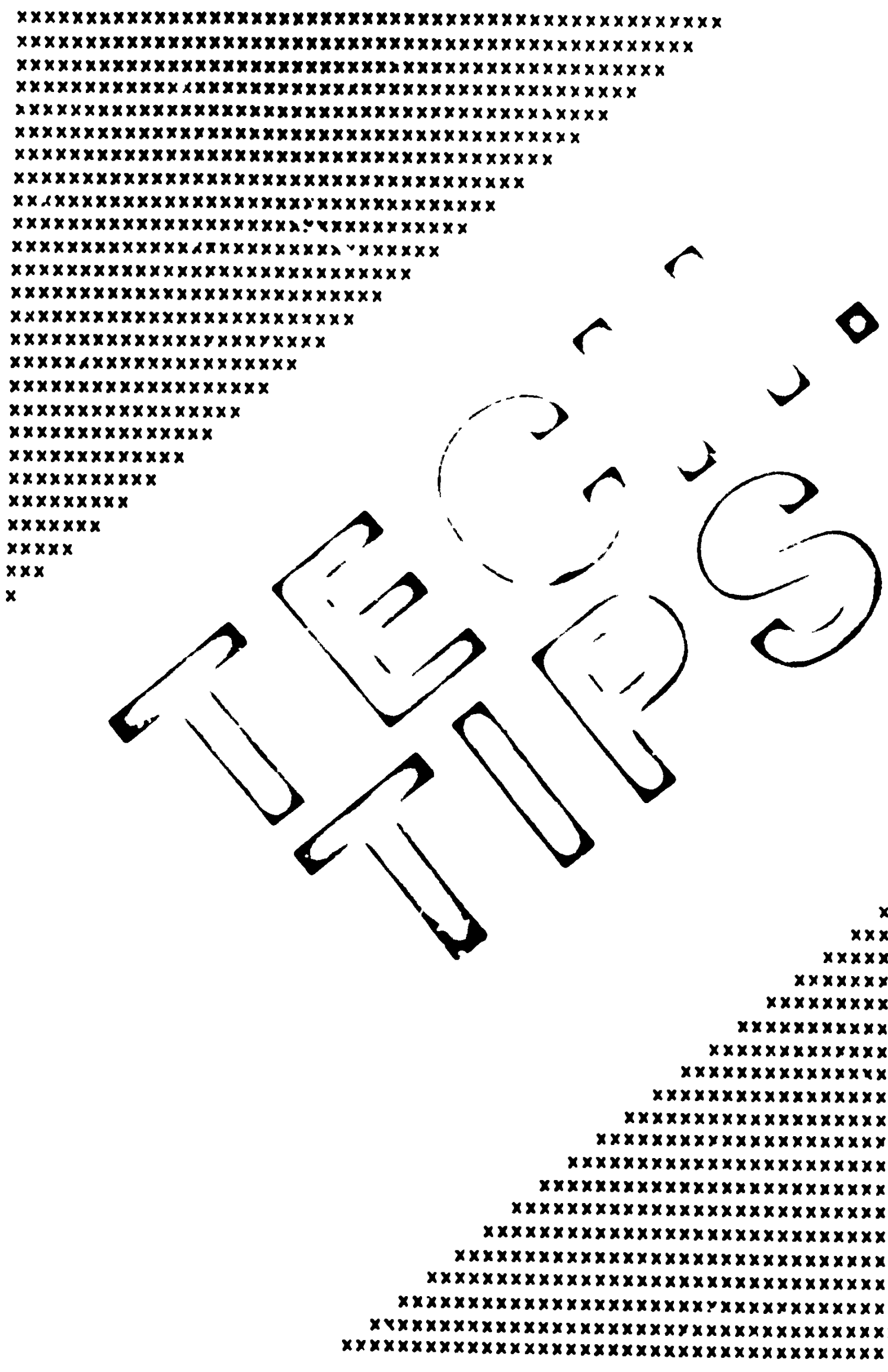

PC300



5-Jan-1988
PC300-INDEX.B
REV B

MICROMEDIA PUBLISHING

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-PC300--TT-24	A	10-Oct-84	353	New proced for running PRO/TMS tst
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-PC300--TT-26	A	5-Nov-84	357	New controller pt no for RD52
-PC300--TT-27	A	5-Nov-84	357	Release maint service ver 2.0
-PC300--TT-28	A	19-Dec-84	362	DECNA-config/documentation
-PC300--TT-29	A	8-Apr-84	382	Testing color monitor on PC325
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-PC300--TT-31	A	20-Dec-85	411	RD51 reliability spec
-PC300--TT-32	A	21-Jan-86	414	RD51 reliability spec
-PC300--TT-33	A	3-Feb-86	416	Non DEC authorized add-on
-PC300--TT-34	A	1-Oct-86	451	Servicing units/locking key switch

digital	FIELD SERVICE TECH TIP					Option Designator PC300	
	☐ 12 Bit	☒ 16 Bit (XX)	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS	
Title MSC11-CK						Tech Tip No. PC3##-TT-1	
Processor Applicability P C 3 0 0		Cross Reference MSC11-TT-1				Tech Tip Rev A	Page 1 of 1
Author DAN MENDELSOHN			Mgr./Supv. Approval				
Location MAYNARD/MILL		Mail Stop MLO5-2/T77				Date MARCH 28, 1983	
CSSE Approval		GARY HOUDESHELL				Date APRIL 1383	
PSG Approval		EDWARD KAY				Date 4 APR 83	

THIS IS A CROSS REFERENCE TECH TIP.

DESCRIPTION

THE MSC11-CK IS A 256KB ADD-ON MEMORY FOR THE PC300 FAMILY OF PERSONAL COMPUTERS. IT CAN RESIDE IN ANY OPEN SLOT IN THE CARD CAGE BACKPLANE.

INSTALLATION

THE BOARD SLIDES INTO ANY OPEN SLOT THE SAME WAY ANY OTHER OPTION IS INSTALLED. THERE ARE NO SWITCHES TO SET OR CABLES TO CONNECT. (NOTE: MAXIMUM MEMORY ALLOWED IS 3MB).

DIAGNOSTICS

THE MODULE IS COMPLETELY TESTED DURING POWER-UP. IF A FAILURE IS DETECTED DURING THIS TEST, THE SLOT CONTAINING THE OPTION WILL BE HIGHLIGHTED AND THE 12 DIGIT DISPLAY WILL HAVE THE FOLLOWING ERROR CODES.

AA	BBBB
00	0034

ERROR CODE	ERROR DEFINITION
1,3,4,5,6,7,10	HARDWARE FAILURE
2	MEMORY EXCEEDS 3MB (NOT ALLOWED)

WHERE

AA = SLOT NUMBER
BBBB = ERROR CODE
000034 = ID NUMBER OF THE OPTION WHICH IS ON THE RED HANDLE ON THE CARD

REPLACE THE BOARD WHEN THE SELF-TEST FAILS, EXCEPT FOR ERROR CODE 2. IN THIS CASE, THERE IS MEMORY IN EXCESS OF 3MB.

RSL

54-15488-KA 256KB OPTION SLOT MEMORY BOARD

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title PC300 BATTERY FAILURES						Tech Tip No PC300-TT-2
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop MLO5-2/T94				Date OCTOBER 21, 1983
CSSE Approval GARY HOUDESHELL						Date OCTOBER 21, 1983
						Date

SOME PC325/350 INSTALLATIONS IN THE FIELD HAVE BEEN REPORTING FAILURES OF THE TIME OF DAY CLOCK DUE TO THE NICD BATTERY THAT IS ATTACHED TO THE REAR OF THE SYSTEM CARD CAGE BEING DEAD.

BEFORE THIS BATTERY IS REPLACED, CUSTOMERS SHOULD BE TOLD TO LEAVE THE SYSTEM POWER TURNED ON FOR 48 HOURS TO INSURE THAT THE BATTERY IS FULLY CHARGED. IF THE TIME OF DAY CLOCK FAILS TO HOLD THE TIME AND DATE AFTER THIS CHARGE TIME, THEN THE BATTERY IS PROBABLY DEFECTIVE AND SHOULD BE REPLACED.

WHEN FULLY CHARGED, THE BATTERY WILL MAINTAIN THE TIME AND DATE FOR AT LEAST 10 DAYS WITH SYSTEM POWER TURNED OFF. REPLACEMENT BATTERIES CAN BE ORDERED BY DEC P/N 12-19245-00.

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PC300 TT 3

DIGITAL	**FIELD SERVICE TECH TIP**					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title MSC11-CK ADD ON MEMORY ALERT						Tech Tip No. PC300-TT-3
Processor Applicability P/C/3/0/0/ / /		Cross Reference MSC11CK-TT-2				Tech Tip Rev A / Page 1 of 1
Author JOHN H. LEEDS JR.			Mgr./Supv. Approval Carl Cline			
Location MAYNARD/MI1		Mail Stop ML05-2/T94				Date December 25, 1983
CSSE Approval						Date 1-26-84
PSG Approval						Date

PROBLEM:

THE MSC11-CK ADD-ON MEMORY FOR THE PC300 WAS RECENTLY MANUFACTURED WITH NON-COMPLIANT ZIF CONNECTORS. MEMORIES WITH THESE DEFECTIVE CONNECTORS MAY NOT MATE WELL WITH THE CORRESPONDING CONNECTOR IN THE PC300 AND MAY BE DIFFICULT TO REMOVE, AND IN EXTREME CASES COULD DAMAGE THE PC300 CONNECTOR.

AFFECTED PRODUCT IDENTIFICATION:

THE SUSPECT MEMORIES CAN BE EASILY IDENTIFIED BY THE TRACKING NUMBER BAR CODES FOUND ON THE MEMORY, AND ON THE SINGLE UNIT PACKAGING. THESE BAR CODES WILL HAVE THE FOLLOWING FIRST FIVE DIGITS IN THEIR TEN DIGIT BAR CODE NUMBERS:

ZG334XXXXX
ZG335XXXXX
ZG336XXXXX
ZG337XXXXX
ZG338XXXXX
ZG339XXXXX
ZG4440XXXX

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PC300 TT 4

DIGITAL	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title PIRACY PROTECTED SOFTWARE ON THE PC300 FAMILY						Tech Tip No. PC300-TT-4
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author CARL CLINE			Mgr./Supv. Approval Carl Cline			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date
CSSE Approval GARY HOUDESHELL						Date 1-26-84
PSG Approval DAVE FALEN						Date

WHAT IS PIRACY PROTECTED SOFTWARE?

THIS IS A METHOD TO PROTECT THE SOFTWARE DEVELOPERS INVESTMENT BY ALLOWING EACH COPY TO RUN ONLY ON A SPECIFIED PC300 MACHINE. THIS IS ACCOMPLISHED BY BONDING THE PARTICULAR PIECE OF SOFTWARE MEDIA TO THE ID ROM LOCATED ON THE PC300 (KDF11-CA/CB) SYSTEM MODULE.

WHAT IS THE IMPACT ON FIELD SERVICE?

SOFTWARE THAT HAS BEEN BONDED TO A PARTICULAR SYSTEM MODULE WILL NOT WORK AFTER A F.S. ENGINEER REPLACES THE SYSTEM MODULE. THE FOLLOWING ALTERNATES ARE AVAILABLE TO THE F.S. ENGINEER OR THE CUSTOMER:

FIELD SERVICE - IF THE SYSTEM MODULE IS A C.S. REV F OR LATER THE ID ROM IS SOCKETED (LOCATION E127, 18 PIN SOCKET) AND SHOULD BE REMOVED FROM THE DEFECTIVE SYSTEM MODULE AND INSERTED INTO THE REPLACEMENT SYSTEM MODULE.

CUSTOMER - IF THE SYSTEM MODULE IS A C.S. REV E. OR EARLIER THE ID ROM IS SOLDERED INTO THE MODULE. IF THIS IS THE CASE, OR, IF THE F.S. ENGINEER FORGOT TO SWAP THE ID ROM, THE ONLY REMEDY IS FOR THE CUSTOMER TO CALL THE SOFTWARE VENDOR AND REQUEST EITHER (1) REPLACEMENT MEDIA, OR (2) REBONDING OF THE SOFTWARE TO THE NEW ID ROM. FOR ALL DCS (DIGITAL CERTIFIED SOFTWARE) SOFTWARE, THE CUSTOMER SHOULD CONTACT THE NEAREST CUSTOMER SUPPORT CENTER (CSC) FOR REPLACEMENT MEDIA OR REBONDING.

FOR NON-DCS WHICH IS BONDED TO THE ID ROM, THE CUSTOMER SHOULD CONTACT THAT VENDOR AND REQUEST REPLACEMENT MEDIA.

IN THE FUTURE, REPLACEMENT OF MEDIA SHOULD NOT BE REQUIRED DUE TO (1) RETENTION OF THE SOCKETED ID ROM, AND (2) ABILITY OF THE CUSTOMER SUPPORT CENTERS TO REBOND FUTURE SOFTWARE TO NEW ID ROM'S

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PC300 TT-5

Digital	**FIELD SERVICE TECH TIP** **Continuation Sheet**	**Option Designator** PC300 **Category** TERMINALS
Title PIRACY PROTECTED SOFTWARE ON THE PC300 FAMILY		**Tech Tip No.** PC300-TT-4
Processor Applicability P | C | 3 | 0 | 0 | | |	**Cross Reference** N/A	**Tech Tip Rev** A **Page** 2 of 2

NOTE: WHEN THE FIELD SERVICE ENGINEER DETERMINES THAT THE SYSTEM MODULE IS DEFECTIVE, S/HE SHOULD SWAP THE ID ROM IF THE ID ROM IS SOCKETED. OTHERWISE, ADVISE THE CUSTOMER TO CALL THE CSC OR THIRD PARTY SOFTWARE VENDOR IF ANY SOFTWARE WHICH IS PROTECTED FAILS TO RUN.

DEFINITIONS:

- BONDING - THIS IS A PROCEDURE THAT MARRIES A PARTICULAR SOFTWARE PACKAGE TO A PARTICULAR HARDWARE SYSTEM. ONCE THIS MARRIAGE IS COMPLETE THE SOFTWARE CAN ONLY BE USED OR REINSTALLED ON THAT SYSTEM.

- REBONDING -THIS IS A PROCEDURE MAINTAINED AT THE CSC (OR THIRD PARTY SOFTWARE VENDOR) THAT TAKES THE UNIQUE SOFTWARE APPLICATION ID AND THE SYSTEM MODULE ID ROM CODE, AND THEN GENERATES A SPECIFIC CODE TO BE USED DURING THE REINSTALLATION PROCESS OF THAT SOFTWARE APPLICATION. THIS PROCESS ONLY NEEDS TO BE USED WHEN THE SYSTEM MODULE IS REPLACED AND THE ID ROM CANNOT BE SWAPPED.

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title USING PRO/WHACK TO CORRECT 400/7 BUGCHECK						Tech Tip No. PC300-TT-5
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author JOHN LEEDS			Mgr./Supv. Approval Carl Cline			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date January 18, 1984
CSSE Approval						Date 1-26-84
PSG Approval						Date

BACKGROUND:

PRO/WHACK IS A BOOTABLE DISKETTE THAT HAS BEEN DESIGNED TO ALLOW THE FIELD SERVICE ENGINEER TO RECOVER THE DATA CONTAINED ON RD50/51 HARD DISKS WHEN A 400/7 ERROR IS ENCOUNTERED AT BOOT TIME. THIS BOOT TIME ERROR IS CAUSED BY A BUG IN THE MICRO CODE A PROM IN THE RD50/51 CONTROLLER. THIS BUG OCCASIONALLY CAUSES THE HEADER BLOCK OF START UP FILE TO BE CORRUPTED. ONCE THIS FILE IS CORRUPTED ANY ATTEMPT TO BOOT THE SYSTEM WILL FAIL. RESULTING IN A PICTURE OF THE PRO DISPLAYED WITH NOTHING HIGHLIGHTED, AND THE TWO NUMBERS BEING DISPLAYED.

000400
000007

PRO/WHACK CAUSES THE SYSTEM TO BE BOOTED FROM THE RX DISKETTE DRIVE. PRO/WHACK THEN REWRITES THE CORRUPTED HEADER BLOCK. ONCE THIS HAS BEEN ACCOMPLISHED THE USER CAN GAIN ACCESS TO HIS/HER HARD DISK FILES. IT SHOULD BE NOTED THAT PRO/WHACK ALLOWS THE FIELD SERVICE ENGINEER TO RECOVER THE SYSTEM. PRO/WHACK DOES NOT SOLVE THE PROBLEM THAT CAUSED THE 400/7 ERROR. THE PROM CONTAINING THE FAULTY MICRO CODE MUST BE REPLACED. SEE THE RD CONTROLLER/BUGCHECK TECH TIP FOR DETAILS ON REPLACING THE PROM.

INSTRUCTIONS:

1) TURN THE POWER TO THE SYSTEM OFF.

2) PLACE A COPY OF PRO/WHACK IN THE TOP RX DRIVE.

3) TURN THE SYSTEM POWER TO THE SYSTEM ON. THIS WILL CAUSE THE PRO TO BOOT FROM THE PRO/WHACK DISKETTE YOU PLACED IN THE RX DRIVE.

4) FOLLOW THE INSTRUCTIONS WHICH APPEAR ON THE SCREEN.

5) WHEN THE PROGRAM HAS FINISHED RUNNING REMOVE THE PRO/WHACK DISKETTE FROM THE RX DRIVE.

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PC300-TT-7

6) TURN THE SYSTEM POWER OFF MOMENTARILY AND THEN BACK ON. THIS WILL CAUSE THE SYSTEM TO BOOT FROM THE HARD DISK. IT SHOULD NOW BE POSSIBLE FOR THE USER TO GAIN ACCESS TO HIS/HER ORIGINAL HARD DISK FILES.

NOTE - PRO/WHACK DOES NOT READ FROM OR WRITE TO THE USER'S FILES. IT WILL NOT IN ANY WAY ALTER THE DATA THE USER HAS STOPED ON THE DISK.

IF PRO/WHACK DOES NOT SOLVE THE 400/7 BOOT TIME PROBLEM. LOOK ELSEWHERE FOR A SOLUTION. THE MOST PROBABLE CAUSE OF THE ERROR IS THAT P/OS HAS BEEN CORRUPTED. HOWEVER, THE 400/ERROR COULD BE CAUSED BY FAULTY HARDWARE. INVESTIGATE ALL POSSIBLE HARDWARE SOLUTIONS TO THE PROBLEM. AS A LAST RESORT REINSTALL POS. WHENEVER P/OS IS LOADED ALL USER FILES WILL BE LOST.

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PC300 TT 5

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title MINIMUM CONFIGURATION FOR PRO/NATIVE TOOL KIT						Tech Tip No. PC300-TT-6
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author JOHN H. LEEDS JR.			Mgr /Supv. Approval Carl Time			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date December 16, 1983
CSSE Approval						Date 1-26-84
PSG Approval						Date

THE MINIMUM SYSTEM CONFIGURATION FOR THE PRO/NATIVE TOOL KIT APPLICATION V1.0 IS AS FOLLOWS:

PC350
RCD51-A (10 MEG HARD DISK)
F.P.P. (FLOATING POINT PROCESSOR)
MSC11-CK ADD-ON-MEMORY (FOR A TOTAL OF 512 K BYTES OF MEMORY)
P/OS V1.7 LATER
PRO/NATIVE TOOL KIT V1.0

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DC300 TT-7

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title P/OS V1.7 COMPATIBILITY NOTE						Tech Tip No. PC300-TT-7
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author JOHN LEEDS			Mgr./Supv. Approval Carl Cline			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 12-17-83
CSSE Approval Tony Hondebell						Date 1-26-84
PSG Approval						Date

THE CURRENT RELEASE OF P/OS is V1.7. THE APPLICATION PRO/COMM MUST ALSO BE V1.7. PRO/COMM V1.5 WILL NOT WORK WITH P/OS V1.7.

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DC300 - TT-7

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title MINIMUM CONFIGURATION FOR UPGRADING TO P/OS V1.7						Tech Tip No. PC300-TT-8
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author JOHN LEEDS			Mgr./Supv. Approval			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 12-20-83
CSSE Approval						Date 1-26-84
PSG Approval						Date

WHEN UPGRADING THE PC3XX SYSTEM SOFTWARE TO P/OS VERSION 1.7. THE FOLLOWING OPTIONS ARE REQUIRED TO LOAD AND OPERATE P/OS, V1.7.

KEF11-AA OR AC
F.P.P. (FLOATING POINT PROCESSOR)
MSC11-CK ADD-ON MEMORY, FOR A TOTAL OF
512 K BYTES OF MEMORY

WHEN LOADING P/OS V1.7 WITHOUT THE KEF11 (F.P.P.) OR THE MSC11-CK, AN ERROR WILL BE DISPLAYED. THE ERROR CODE IS AS FOLLOWS:

100410
055474

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINAL
Title PRO-CP/M DIAGNOSTICS						Tech Tip No. PC300-TT-9
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 6 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date JAN 9, 1984
PSG Approval DAVE FALEN						Date

THERE HAS BEEN SOME CONFUSION AROUND WHERE THE DIAGNOSTICS RESIDE FOR THE PRO CP/M HARDWARE OPTION. THE DIAGNOSTICS FOR THIS OPTION ARE INCLUDED WITH THE CP/M OPERATING SYSTEM/APPLICATION DISKETTE PACKAGE (DEC PART NUMBER QBA46-H3). THIS PACKAGE INCLUDES TWO APPLICATION DISKETTES, ONE FOR FLOPPY BASED SYSTEMS AND ONE FOR HARD DISK BASED SYSTEMS. THE CP/M HARDWARE DIAGNOSTICS ARE EMBEDDED ON BOTH OF THESE DISKETTES. TO INTEGRATE THESE DIAGNOSTICS ONTO MAINTENANCE SERVICES, SELECT AND RUN "UPDATE MAINTENANCE SERVICES" FROM THE MAINTENANCE SERVICES MENU. WHEN THE INSTRUCTION TO INSERT THE DISKETTE CONTAINING THE OPTION'S DIAGNOSTICS APPEARS ON THE VIDEO DISPLAY, EITHER OF THE CP/M APPLICATION DISKETTES MAY BE INSERTED (BOTH CONTAIN THE SAME DIAGNOSTIC CODE). AFTER THE UPDATE PROCEDURE IS COMPLETED, THE CP/M OPTION WILL BE TESTED WHEN "SYSTEM UNIT TEST" IS SELECTED FROM THE MAINTENANCE SERVICE MENU.

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINAL
Title MAKING TEST DISKETTES FOR MAINTENANCE SERVICES						Tech Tip No. PC300-TT -10
Processor Applicability P | C | 3 | 0 | 0 | | i |		Cross Reference N/A			Tech Tip Rev A	Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MILL/MAYNARD		Mail Stop ML05-2/T94				Date 6 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date JAN 9, 1984
PSG Approval DAVE FALEN						Date

THE MAINTENANCE SERVICES APPLICATION VERSION 1.7 REQUIRES THAT THE "TEST DISKETTE" BE INSTALLED IN FLOPPY DRIVE 2 BEFORE IT WILL DISPLAY THE MAINTENANCE SERVICES MENU IF DIAGNOSTICS ARE LOADED FROM THE FLOPPY DRIVE. THE "TEST DISKETTE" IS ALSO THE PIECE OF MEDIA WHERE OPTIONAL HARDWARE DIAGNOSTICS RESIDE WHEN "UPDATE MAINTENANCE SERVICES" IS USED TO INTEGRATE DIAGNOSTICS FOR HARDWARE OPTIONS INTO THE"SYSTEM UNIT TEST".

THE FOLLOWING PROCEDURE CAN BE USED TO MAKE "TEST DISKETTES":

1) SELECT "DISK/DISKETTE SERVICES" FROM THE P/OS MAIN MENU AND PRESS DO.

2) INSERT A BLANK FLOPPY DISKETTE INTO EITHER DISKETTE DRIVE SLOT.

3) SELECT "INITIALIZE DISKETTE" FROM THE DISK/DISKETTE SERVICES MENU AND PRESS DO.

4) SPECIFY WHICH SLOT (1 OR 2) CONTAINS THE DISKETTE AND PRESS DO.

5) AT THE PROMPT FOR "VOLUME NAME" TYPE PROTEST AND PRESS DO.

6) A MESSAGE WILL RETURN THAT THE VOLUME HAS BEEN INITIALIZED.

YOU NOW HAVE A NEW "TEST DISKETTE" FOR USE WITH THE MAINTENANCE SERVICES APPLICATION.

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PC300-TT 13

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BH	☒ 16 BH	☐ 18 BH	☐ 32 BH	☐ 36 BH	Category TERMINALS
Title RELEASE OF MAINTENANCE SERVICES VERSION 1.7						Tech Tip No PC300-TT-11
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 5 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date Jan 9, 1984
PSG Approval DAVE FALEN						Date

THE MAINTENANCE SERVICES APPLICATION PACKAGE VERSION 1.7 HAS BEEN RELEASED AND IS NOW AVAILABLE FROM THE SDC. THE ENTIRE DIAGNOSTIC PACKAGE CAN BE ORDERED USING DEC PART NUMBER QBA01-A3 OR INDIVIDUAL DISKETTES CAN BE ORDERED USING THE FOLLOWING PART NUMBERS:

DEC P/N	DESCRIPTION
BL-V811B-BH	P/OS DISKETTE SYSTEM V1.7
BL-T308C-MH	MAINTENANCE SERVICES APPLICATION V1.7
BL-P751C-BH	TEST DISKETTE V1.7

VERSION 1.7 OF MAINTENANCE SERVICES IS THE FIRST RELEASE OF THE DIAGNOSTIC PACKAGE THAT HAS THE CAPABILITY OF TESTING ALL HARDWARE DEVICES (INCLUDING THE HARD DISK) WHEN LOADED AND RUN FROM THE RX50. MAINTENANCE SERVICES CAN STILL OPTIONALLY BE LOADED AS AN APPLICATION ON THE HARD DISK IF P/OS IS PRESENT. IF THE HARD DISK CONTAINS AN OPERATING SYSTEM OTHER THAN P/OS, MAINTENANCE SERVICES MUST BE RUN FLOPPY BASED.

TO RUN MAINTENANCE SERVICES VIA THE FLOPPY DISKETTE DRIVE, DO THE FOLLOWING:

1) TURN THE POWER SWITCH TO THE 0 (OFF) POSITION ON THE PC325 OR PC350.
2) INSERT THE "P/OS DISKETTE SYSTEM V1.7" DISKETTE INTO DRIVE 1 (TOP SLOT).
3) TURN THE POWER SWITCH TO THE 1 (ON) POSITION.
4) IF SELF-TEST COMPLETES SUCCESSFULLY, THE P/OS DISKETTE BASED OPERATING SYSTEM WILL BE LOADED AUTOMATICALLY. THIS WILL OVERRIDE THE OPERATING SYSTEM ON THE HARD DISK (IF PRESENT).
5) WHEN THE INSTRUCTION APPEARS ON THE SCREEN TO REMOVE THE SYSTEM DISKETTE AND INSERT AN APPLICATION DISKETTE INTO DRIVE 1, THE APPLICATION DISKETTE TO BE INSERTED IS "MAINTENANCE SERVICES APPLICATION V1.7". PRESS "RESUME".
6) THE MESSAGE "PLEASE INSERT THE DISKETTE LABELED TEST DISKETTE IN DISK DRIVE TWO" SHOULD NOW APPEAR ON THE SCREEN. INSERT "TEST DISKETTE V1.7" INTO DRIVE 2 AND PRESS 'RESUME".
7) THE MAINTENANCE SERVICES MENU SHOULD NOW APPEAR ON THE SCREEN. THE MENU ITEMS CAN BE RUN AS DESCRIBED IN THE "PROFESSIONAL 300 SERIES" POCKET SERVICE GUIDE.

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DC300-TT-14

8) WHEN USE OF THE MAINTENANCE SERVICES APPLICATION HAS BEEN COMPLETED, RETURN TO THE MAINTENANCE SERVICES MENU. THEN, PRESS "EXIT". THE MESSAGE "APPLICATION COMPLETED SUCCESSFULLY" SHOULD APPEAR ON THE SCREEN. THE DISKETTES MAY BE REMOVED AT THIS TIME.

9) TO START AN OPERATING SYSTEM ON THE HARD DISK (IF PRESENT), SIMPLY CYCLE POWER "OFF" AND THEN "ON" AGAIN.

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DIGITAL	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title COMMUNICATIONS PORT LOOPBACK CONNECTOR						Tech Tip No. PC300-TT-12
Processor Applicability P | C | 3 | 0 | 0 | | |	Cross Reference N/A					Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr/Supv Approval CARL CLINE			
Location MAYNARD/MILL	Mail Stop ML5-2/T94					Date 4 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date JAN 9, 1984
PSG Approval DAVE FALEN						Date

AS OF JANUARY 2, 1984, THE PC300 COMMUNICATIONS PORT LOOPBACK TEST CONNECTOR WILL CHANGE FROM THE H325 TO THE 29-24795-00. THE NEW LOOPBACK CONNECTOR HAS BEEN IMPLEMENTED IN CONJUNCTION WITH THE VERSION 1.7 RELEASE OF THE MAINTENANCE SERVICES PACKAGE. WHEN USING VERSION 1.7 OR HIGHER OF MAINTENANCE SERVICES, THE NEW LOOPBACK CONNECTOR MUST BE USED. IF THE H325 LOOPBACK CONNECTOR IS USED WITH THESE VERSIONS OF MAINTENANCE SERVICES, EXTERNAL LOOPBACK OF THE COMMUNICATIONS PORT WILL FAIL DUE TO INCREASED TEST COVERAGE WITH THE NEW LOOPBACK CONNECTOR. THE FOLLOWING IS THE INFORMATION FOR ORDERING THE NEW LOOPBACK CONNECTOR FROM THE FIELD SERVICE STOCKROOM:

DEC P/N	DESCRIPTION
29-24795-00	25-PIN COMMUNICATIONS PORT LOOPBACK TEST CONNECTOR

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title PRINTER PORT LOOPBACK CONNECTOR						Tech Tip No. PC300-TT-13
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A	Page 1 of 1
Author RON CAPRIO			Mgr /Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date December 29, 1983
CSSE Approval GARY HOUDESHELL						Date JAN 9, 1984
PSG Approval DAVE FALEN						Date

AS OF JANUARY 2, 1984, THE PRINTER PORT LOOPBACK TEST CONNECTOR WILL BE AVAILABLE THROUGH THE FIELD SERVICE STOCKROOM. THIS LOOPBACK CONNECTOR IS INTENDED FOR USE WHEN RUNNING THE "SYSTEM UNIT TEST" FROM MAINTENANCE SERVICES AND EXTERNAL LOOPBACK IS SELECTED (SERVICE MODE ONLY). THE LOOPBACK CONNECTOR IS INTENDED FOR USE WITH ALL PC300 FAMILY SYSTEMS. THE FOLLOWING IS THE INFORMATION FOR ORDERING THE LOOPBACK CONNECTOR:

DEC P/N	DESCRIPTION
29-24794-00	9-PIN PRINTER PORT LOOPBACK TEST CONNECTOR

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PC300-TT-17

DIGITAL	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title PC300 EXTERNAL CABLES						Tech Tip No. PC300-TT-14
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML5-2/T94				Date DECEMBER 9, 1983
CSSE Approval GARY HOUDESHELL						Date JAN 9, 1984
PSG Approval DAVE FALEN						Date

THE PURPOSE OF THIS TECH TIP IS TO HIGHLIGHT THE CROSS-REFERENCE BETWEEN "BCC" OPTION NUMBERS AND "17" CLASS PART NUMBERS FOR PC300 FAMILY EXTERNAL CABLES. IT SHOULD BE NOTED THAT THE FIELD SERVICE RSL'S CONTAIN ALL "17" CLASS PART NUMBERS AND AS SUCH, THE "17' CLASS PART NUMBERS SHOULD BE USED WHEN ORDERING THESE CABLES FROM THE FIELD SERVICE STOCKROOM.

OPTION NUMBER	PART NUMBER	DESCRIPTION
BCC 01-06	17-00294-00	KEYBOARD CABLE (6FT)
BCC 02-02	17-00283-01	MONOCHROME VIDEO CABLE (2.5FT)
BCC 02-06	17-00283-00	MONOCHROME VIDEO CABLE (6FT)
BCC 03-06	17-00284-00	COLOR VIDEO CABLE (6FT)
BCC 04-10	17-00289-00	COMMUNICATION CABLE (10FT)
BCC 04-25	17-00289-01	COMMUNICATION CABLE (25FT)
BCC 04-50	17-00289-02	COMMUNICATION CABLE (50FT)
BCC 05-10	17-00300-00	PRINTER CABLE (10FT)
BCC 05-25	17-00300-01	PRINTER CABLE (25FT)
BCC 05-50	17-00300-02	PRINTER CABLE (50FT)
BCC 05-A0	17-00300-03	PRINTER CABLE (100FT)
BCC 08-10	17-00301-00	CONSOLE CABLE (10FT)
BCC 08-25	17-00301-01	CONSOLE CABLE (25FT)
BCC 08-50	17-00301-02	CONSOLE CABLE (50FT)
BCC 10-03	17-00370-01	RTI SERIAL CABLE (3FT)
BCC 11-03	17-00371-01	RTI IEEE CABLE (3FT)
BCC 12-03	17-00379-01	RTI PARALLEL CABLE (3FT)
NONE	17-00302-00	X.21 COMMUNICATION CABLE (10FT)
NONE	17-00089-01	TMS TELEPHONE CABLE

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PC300-TT-18

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title NEW BASE SYSTEM ROMS FOR PC300						Tech Tip No. PC300-TT -15
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML5-2/T94				Date 4 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date Jan 9, 1984
PSG Approval DAVE FALEN						Date

A NEW SET OF BASE SYSTEM ROM'S HAVE BEEN GENERATED FOR THE PC325 AND PC350 SYSTEMS. THESE ROMS ARE LOCATED ON THE SYSTEM MODULE UNDER THE BANK 0 RAM DAUGHTER MODULE. THE NEW ROM SET HAS BEEN GENERATED DUE TO BUGS DISCOVERED IN THE ORIGINAL ROM SET THAT EFFECT THE CTNA (ETHERNET) OPTION AND THE IVIS VIDEO SUBSYSTEM. THE ROMS ON THE SYSTEM MODULE WILL BE MARKED AS FOLLOWS:

OLD ROM SET	NEW ROM SET
23115E4	23253E4
23116E4	23254E4

WITH REGARDS TO THE CTNA OPTION, IF THE "OLD" ROM SET IS PRESENT, THE CTNA OPTION MUST BE INSTALLED IN BACK OF (HIGHER SLOT #) THE BACKPLANE MEMORY OPTION (MSC11-CK).

IF THE "NEW" ROM SET IS PRESENT, MODULE LOCATION IS NOT A PROBLEM.

WITH REGARDS TO THE IVIS OPTION, ALL SYSTEMS THAT HAVE THE IVIS OPTION INSTALLED MUST USE THE "NEW" ROM SET IN ORDER FOR THE GRAPHICS PRIMITIVES TO WORK CORRECTLY.

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title CORRUPTED DATA IN THE TIME OF DAY CLOCK						Tech Tip No. PC300-TT-16
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author DAVID OLIVER			Mgr./Supv. Approval Carl Quiec			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date
CSSE Approval Bruce Campbell						Date 1-26-84
PSG Approval						Date

PROBLEM

THE TIME OF DAY CLOCK LOOSES THE CORRECT TIME AND DATE.

CAUSES

1) LOW VOLTAGE ON THE NICD BATTERY; IN ORDER TO INSURE THAT THE BATTERY IS FULLY CHARGED THE SYSTEM POWER MUST BE LEFT ON CONTINUOUSLY FOR 48 HOURS. ONCE FULLY CHARGED THE BATTERY WILL MAINTAIN THE CORRECT TIME AND DATE FOR A MINIMUM OF 10 DAYS WHILE THE SYSTEM POWER IS TURNED OFF.

2) BAD CONNECTOR ON THE BATTERY PACK; THE CONNECTOR WHICH MATES WITH THE SYSTEM MODULE HAS BEEN SHOWN TO BE UNRELIABLE. IN SOME INSTANCES THIS WILL CAUSE THE CORRECT TIME AND DATE TO BE LOST.

3) A BUG IN VERSIONS 1.0, 1.5 and 1.7 of POS; OCCASIONALLY WHEN THE SYSTEM IS BOOTED THE POS SOFTWARE WILL RESET THE TIME OF DAY CLOCK TO MIDNIGHT MARCH 30, 1984.

RELATED PROBLEMS

SOME SOFTWARE, BOTH DIGITAL SUPPLIED, AND USER GENERATED, REQUIRES THAT THE DATA CONTAINED IN THE TIME OF DAY CLOCK BE VALID. A CORRUPTED CLOCK CAN CAUSE ERRONEOUS ERROR MESSAGES AND PREVENT SOME PROGRAMS FROM FUNCTIONING PROPERLY.

ACTIONS TO BE TAKEN

TEMPORARY FIX

1) INSTRUCT THE USER TO CHECK THE TIME OF DAY CLOCK WHENEVER HE/SHE POWERS UP THE SYSTEM. IF AN INVALID DATA IS FOUND ENTER THE CORRECT TIME AND DATE.

NOTE #1 - THE ONLY TIME THE CLOCK IS CORRUPTED IS DURING POWERUP. ONCE THE PROPER DATE HAS BEEN SET, IT WILL NOT BE MESSED UP WHILE THE SYSTEM IS RUNNING.

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LONG TERM FIX:

1) UPGRADE THE BATTERY TO PART #1219245-00 REV C

   NOTE #2 - THIS BATTERY HAS A NEW AND IMPROVED CONNECTOR. THE SIMPLEST WAY TO IDENTIFY IF A BATTERY IS REV C IS TO INSPECT THE CONNECTOR. THE REV C CONNECTOR IS BROWN. THE CONNECTOR ON EARLIER VERSIONS IS WHITE.

2) ALLOW THE BATTERY TO CHARGE FOR 48 HRS.

3) RECOMMEND TO THE USER THAT HE/SHE UPGRADE THEIR POS OPERATING SYSTEM TO VERSION 2.0 WHEN IT BECAME AVAILABLE. NEXT RELEASE IS SCHEDULED FOR Q4, FY84.

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TTPC300 TT 21

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title LOOSE SOCKETED COMPONENTS ON PC350 OPTION MODULES						Tech Tip No. PC300-TT-17
Processor Applicability P | C | 3 | 5 | 0 | | | |		Cross Reference N/A			Tech Tip Rev A	Page 1 of 1
Author DAVID OLIVER			Mgr./Supv. Approval			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date
CSSE Approval						Date 1-26-84
PSG Approval						Date

PROBLEM

IT HAS BEEN FOUND THAT MANY OPTION MODULE HARDWARE FAILURES ARE CAUSED BY SOCKETED COMPONENTS WORKING THEMSELVES LOOSE. THIS IS CAUSED BY FORCES ASSOCIATED WITH THERMAL CYCLING OR ROUGH HANDLING OF THE CARDS. MANY OF THE FAILURES OF THIS CLASS ARE INTERMITTENT ONES.

ACTION TO BE TAKEN

IT IS SUGGESTED THAT THE SUSPECT MODULE BE REMOVED FROM THE SYSTEM AND ALL THE SOCKETED CHIPS BE "RESEATED". IN ORDER TO "RESEAT" A CHIP SIMPLY PRESS FIRMLY ON IT, PUSH IT BACK INTO PLACE. SOME OF THE LARGER CHIPS WILL MAKE A CRACKLING SOUND. THIS SOUND IS NORMAL. DO NOT REMOVE THE CHIP FROM THE SOCKET AND THEN REINSTALL THE CHIP IN THE SOCKET. AFTER ALL SOCKETED CHIPS HAVE BEEN "RESEATED" REINSTALL THE OPTION MODULE IN THE SYSTEM MODULE.

(NOTE #1) IT IS GOOD PRACTICE TO "RESEAT" THE SOCKETED COMPONENTS ON THE OPTION MODULE WHENEVER THE DIAGNOSTIC SOFTWARE INDICATED THAT THEIR IS ANY TYPE HARDWARE PROBLEM WITH THE SYSTEM.

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PC300 TT-22

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title HARDWARE RELATED BUGCHECK CODES/SYSTEM CRASHES						Tech Tip No. PC300-TT-18
Processor Applicability p | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 4
Author DAVID OLIVER			Mgr./Supv. Approval			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date
CSSE Approval						Date 1-26-84
PSG Approval						Date

PROBLEM

THE ERROR SCREEN IS DISPLAYED. THE OUTLINE OF THE SYSTEM APPEARS WITHOUT ANY OF THE SYSTEM'S HARDWARE MODULES HIGHLIGHTED. TWO NUMBERS ARE DISPLAYED ONE ON TOP OF THE OTHER. THESE NUMBERS ARE "BUG CHECK CODES". THE BUG CHECK CODES ARE DESIGNED TO INDICATE THAT A SOFTWARE ERROR HAS OCCURRED. THEY PROVIDE THE USER WITH USEFUL INFORMATION TO ISOLATE THE MALFUNCTIONING SOFTWARE.

NOTE #1 - SEE SECTION APPENDIX 1 FOR A COMPLETE LIST OF BUGCHECK CODES.

IT HAS BEEN FOUND THAT IMPROPER SEATING OF THE OPTION MODULE IN THE CAPD CAGE, OR LOOSE SOCKETED COMPONENTS BOTH ON THE OPTION CARDS AND THE SYSTEM MODULE CAN CAUSE THE SYSTEM TO ISSUE SOME OF THE BUG CHECK CODES. THESE CODES ARE:

300/000	IOT IN SYSTEM STATE
300/001	STACK OVERFLOW
300/002	TRACE TRAP OR BREAKPOINT
300/003	ILLEGAL INSTRUCTION TRAP
300/004	MEMORY TIMEOUT OR NONEXISTENT MEMORY
300/005	MEMORY MANAGEMENT ERROR
300/006	A TACK ON P/OS WITHOUT A PARENT ABORTED

300 CLASS BUG CHECK CODES ARE TO BE CONSIDERED HARDWARE RELATED UNDER THE FOLLOWING CONDITIONS

1) WHEN THE ERRORS OCCUR AT POWERUP TIME.

2) WHEN THE ERRORS OCCUR RANDOMLY WHILE THE SYSTEM IS RUNNING.

NOTE #2 - HOWEVER, IF A 300 CLASS ERROR CODE OCCURS REPEATEDLY WHILE A PARTICULAR PROGRAM OR APPLICATION IS RUNNING THE PROBLEM IS MOST LIKELY SOFTWARE RELATED.

3) WHEN THE REVISION LEVEL OF THE KDF11-CA/CB'S SYSTEMS MODULE (#5415101) IS REV E OR EARLIER.

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NOTE 3 - SEVERAL ENGINEERING CHANGES HAVE BEEN MADE TO THE REV F SYSTEM MODULE. THESE CHANGES MAKE THE SYSTEM MODULE MUCH MORE RELIABLE. IF THE SYSTEM MODULE IS OF THIS REVISION OR OF A HIGHER THAN 300 CLASS ERROR IS MOST PROBABLY NOT HARDWARE RELATED (SEE FCO #5415101-M-0012)

NOTE #4 - ALL SYSTEMS SHIPPED AFTER DECEMBER 1, 1983 CONTAIN SYSTEM MODULES OF REV F1 OR GREATER. THE SERIAL NUMBER FOR THESE MACHINES ARE ABOVE WF44100 FOR THE PC350 AND ABOVE WF11800 FOR THE PC325.

ACTION TO BE TAKEN

TEMPORARY FIX

INSTRUCT THE USER TO VERIFY THAT ALL SOCKETED CHIPS ARE PROPERLY SEATED ON BOTH THE SYSTEM MODULE AND THE OPTION CARDS. THIS CAN BE ACCOMPLISHED BY PRESSING FIRMLY ON CHIPS. THE OPTION MODULES SHOULD THEN BE REINSTALLED IN THE CARD CAGE. THE MODULES SHOULD BE ALIGNED BOTH HORIZONTALLY AND VERTICALLY TO INSURE PROPER SEATING. FINALLY VERIFY THAT ALL CABLES ARE PROPERLY SEATED.

NOTE #5 - THE USER CAN BE INSTRUCTED TO SIMPLY REBOOT HIS/HER SYSTEM. THIS IS ACCOMPLISHED BY TURNING THE POWER OFF MOMENTARILY AND THEN TURNING IT BACK ON. THIS WILL ALLOW THE USER TO RECOVER FROM THE 300 CLASS BUG CHECK CODE. JUST REBOOTING WILL NOT FIX THE PROBLEM THAT CAUSED THE ERROR BUT WILL ALLOW THE USER TO CONTINUE TO UTILIZE THE SYSTEM.

LONG TERM FIX

IMPLEMENT FCO 5415101-M-0012. THIS FCO CALLS FOR THE KDF11-CA/CB SYSTEM MODULES TO BE UPGRADED TO REV F. MODULES OF THIS REVISION LEVEL OR GREATER CONTAIN THE FOLLOWING ENHANCEMENTS.

1) A NEW CARD CAGE DESIGNS: THIS CARD CAGE HOLDS THE OPTION CARDS FIRMLY IN PLACE INSURING GOOD CONTACT BETWEEN THE OPTION CARDS AND THE SYSTEM MODULE.

2) IMPROVED SOCKETS: THE SOCKETS WHICH CONTAIN THE 3 PROCESSOR CHIPS CPU, MMU, FPP HAVE BEEN UPGRADED. THE OLD SOCKETS MADE CONTACT WITH ONLY ONE SIDE OF THE CHIPS LEADS WHILE THE NEW SOCKETS MAKE CONTACT WITH BOTH SIDES. THIS INSURES GOOD CONTACT BETWEEN THE CHIP AND THE SYSTEM MODULE.

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3) MEMORY MODULE CLIPS: CLIPS HAVE BEEN ADDED TO THE SYSTEM MODULE TO INSURE THAT THE MEMORY DAUGHTER BOARDS ATTACH SECURELY TO THE SYSTEM MODULE.

4) NEW PULLUP RESISTORS: THE VALUES OF MANY OF THE PULLUP RESISTORS USED ON BOTH THE KDF11-CA/CB HAVE BEEN OPTIMIZED TO PROVIDE INCREASED PERFORMANCE AND RELIABILITY.

5) ID PROM SOCKET: THE ID PROM ON EARLIER REVISIONS OF THE SYSTEM MODULE WAS SOLDERED TO THE BOARD. THIS CHIP IS NOW SOCKETED (LOCATION E127). MANY PIRACY PROTECTED SOFTWARE PACKAGES UTILIZE THE ID NUMBER. THIS SOCKET WILL ALLOW ID PROMS TO BE SWAPPED BETWEEN SYSTEM MODULES. A MODULE SWAP WILL NOW APPEAR TRANSPARENT TO PIRACY PROTECTED SOFTWARE.

UNDER NO CIRCUMSTANCES SHOULD A KDF11-CA/CB CONTAINING A SYSTEM MODULE OF REV F OR GREATER BE SWAPPED OUT BECAUSE OF INTERMITTENT 300 CLASS ERRORS. 300 CLASS ERRORS IN SYSTEMS CONTAINING THE ENHANCED SYSTEM MODULES ARE MOST PROBABLY SOFTWARE RELATED.

NOTE #7 - UNDER NO CIRCUMSTANCES SHOULD KDF11-CA/CB CONTAINING A SYSTEM MODULE OF REV F OR GREATER BE SWAPPED OUT AND REPLACED WITH A KDF11-CA/CB CONTAINING A SYSTEM MODULE THAT IS REV E OR BELOW. THE HIGHER REVISION LEVELS SYSTEM MODULES CONTAIN ENHANCE PERFORMANCE. SWAPPING WITH THE LOWER REVISION LEVEL BOARDS WILL DOWNGRADE THE PERFORMANCE OF THE SYSTEM.

LARS REPORT DATA

WHENEVER THE FCO IS IMPLEMENTED THE FOLLOWING DATA SHOULD BE PLACED IN A LARS REPORT:

- ACTIVITY "W"
- DEC OPTION "KDF11-CA/CB"
- TYPE OF CALL "M"
- ACTION TAKEN "C"
- FAIL AREA-MODULE-FCO-COMMENTS "KDF11 FCO#12"

APPENDIX 1

THE FOLLOWING IS A LIST OF POSSIBLE BUGCHECK CODES AND THEIR MEANINGS:

000100 P/OS KEYBOARD HANDLER
XXXXXX ANY COMBINATION OF CODES

000200 TERMINAL DRIVER
XXXXXX

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100400  P/OS TERMINAL SUBSYSTEM
XXXXXX

000300  P/OS EXECUTIVE OF OTHER SYSTEM ERROR
000000  IOT IN SYSTEM STATE

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000001  STACK OVERFLOW

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000002  TRACE TRAP OR BREAKPOINT

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000003  ILLEGAL INSTRUCTION TRAP

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000004  ODD ADDRESS OR OTHER TRAP 4

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000005  SEGMENT FAULT

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000006  A TASK ON P/OS WITHOUT A PARENT ABORTED

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000007  EMT TRAP

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
000010  TRAP TRAP

000300  P/OS EXECUTIVE OR OTHER SYSTEM ERROR
XXXXXX  PROGRAMMED CALL TO BUGCHECK MACRO

000400  SYSTEM STARTUP PROCESSING ERROR
000001  CAN'T INSTALL TASK CBOOT

000400  SYSTEM STARTUP PROCESSING ERROR
000002  CAN'T SPAWN TASK CBOOT

000400  SYSTEM STARTUP PROCESSING ERROR
000007  REQUIRED FILE NOT FOUND
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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category SYSTEMS
Title PC300 Series - TMS Configuration						Tech Tip No. PC300-TT-19
Processor Applicability P C 3 0 0		Cross Reference DTC11-A/B-TT-01				Tech Tip Rev A / Page 1 of 1
Author Bob Larsen			Mgr/Supv Approval Ralph Gilbert			Date 5/24/84
Location Maynard		Mail Stop PK03-1/10B				
CSSE Approval						Date 6/20/84
FSPSG APPROVAL						Date

The TMS (Telephone Management System) option to the PC300 Series consists of the following:

Telephone Management System (TMS):	DTC11-A
TMS Controller Board	54-15215
TLI (Telephone Line Interface)	70-20405
Modular Telephone Cable	17-00089-01

TMS Accessories:

TMS Voice Unit	DTC11-B
TMS Keyset Adapter	DTC11-XK
TMS Footpedal	DTC11-XF
TMS Headphone	DTC11-XH
TMS Microphone	DTC11-XM

TMS Spares:

The TMS CD Kit (A2-W(M)0737) DTC11-A, consists of the TMS Controller board and the TLI (Telephone Line Interface) module. Any other spares that may be needed can be ordered using the part numbers specified previcusly.

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DIGITAL	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☐ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category SYSTEMS
Title PC300 Series - Hints for using TMS with PRO/COMM V1						Tech Tip No. 8 PC300-TT-20
Processor Applicability P C 3 0 0		Cross Reference DTC11-A/B -TT-02				Tech Tip Rev A / Page 1 of 2
Author Bob Larsen			Mgr /Supv. Approval Ralph Gilbert			
Location Maynard, MA		Mail Stop PKO3-1/10B				Date 6/14/84
CSSE Approval ~~Ralph Gilbert~~						Date 6/20/84
FSPSG APPROVAL						Date

1. ALTERNATE METHOD FOR TERMINAL EMULATION

From the MAIN MENU select Pro/Comm V1.A - press DO
(you should now be in the Communications Services Menu)

Select Terminal Emulation - press DO
(this will put you into Terminal Emulation Mode)

Press the F19 key
(you will now be in the Call Serices Menu)

Select Auto Dial or Auto Dial from Phone Book - press DO

Enter phone number to be dialed or select phone book entry - press DO
(After the number has finished dialing, you will connect to your host system and may immediately begin the normal log-in procedures).

2. ERRORS WHILE TRYING TO CONNECT THE LINE

When using the Auto Dial features, TMS does not always connect to the phone line.

TMS automatically begins to dial the phone number immediately after going off hook, in some cases, this does not allow time enough for the dial tone to be received. This problem may be remedied by use of the character code "!" being placed at the beginning of the phone number. This character may be used to allow a delay (up to 5 seconds) for TMS to wait for an initial or intermediate dial tone.

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3. TELEPHONE LINE HOLD

If TMS is to be used on any phone line that either has a phone with a hold button on it or has another phone connected to the same line that has holding features on it, the TELEPHONE LINE HOLD set-up may need to be ENABLED. This set-up can be found in the Set up Menu under Line Characteristics. After selecting the appropriate TMS line, press Additional Options.

4. PHONEBOOK SERVICES MENUS

When setting up Phone Book Services, there are additional option selections that must be taken into consideration for each phone book entry if you want different line characteristics than those in the Set Up Menu. If TMS will not auto dial using the Phonebook, check these line characteristics in Phonebook Services.

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PC300-TT-20

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category SYSTEMS
Title PC300 Series - TMS Documentation/Software						Tech Tip No PC300-TT-21
Processor Applicability P C 3 0 0			Cross Reference DTC11-A/B -TT-03			Tech Tip Rev A / Page 1 of 1
Author Bob Larsen			Mgr./Supv. Approval Ralph Gilbert			
Location Maynard		Mail Stop PKO3-1/10B				Date 5/24/84
CSSE Approval						Date 6/26/84
FSPSG APPROVAL						Date

TMS DOCUMENTATION

The following is a list of the TMS documentation currently available:

	TMS Owners Manual	EK-00TMS-OP-001
*	TMS Installation Instructions	EJ-25190 83
*	TMS Accessories Instal. Instructions	EJ-25555 83
	TMS Programmers Reference Manual	AA-AD34A-TH
	Pro 350 Pocket Service Guide (w/TMS)	EK-PC350-PS-002
	Pro 350 Technical Manual (w/TMS)	EK-PC350-TM-002
	TMS Field Maint. Print Set	MP-01654-01

* Note: The TMS Owners Manual lists the part numbers of these two manuals incorrectly. The part numbers are correct as listed in this Tech Tip.

TMS COMPATIBLE SOFTWARE

The following DEC software is compatible with TMS (Earlier version of the software listed here should NOT be used with the TMS Option): Later versions may also be used.

P/OS V1.7	QBA 02-H3
Pro/Installation and Maint. Services V1.7	QBA 01-H3
Pro/TMS Communications Test Services V1.2	BL-N769C-BH
Pro/Communications V1.8	QBA 05-H3

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title ORDERING OF PC300 P/OS LEGEND STRIPS						Tech Tip No. PC300-TT-22
Processor Applicability P C 3 0 0		Cross Reference LK201-TT-04				Tech Tip Rev A / Page 1 of 1
Author GABRIELLE DUKER		Mgr./Supv. Approval				
Location MILL, MAYNARD		Mail Stop ML05-2/T94				Date 7/20/84
CSSE Approval						Date 20-JUL-84
FSPSG APPROVAL						Date

PROBLEM:

There are many instances when customers have lost or misplaced the PC300 P/OS Keyboard Legend Strips or have returned it along with a defective keyboard. This Legend Strip is a part of the PC300 P/OS software package.

SOLUTION:

PC300 P/OS Keyboard Legend Strips may be ordered (one or more per order) by filling out an Internal Software Order Form (Form # EN-01740-07-0000(36R)) as follows:

Part/Kit No. = 36-20220-01
Description = P/OS Operating System Pro/US Legend Strips
Version = Pro/US
Unit MLP = 0.01

Mail the completed form to:

SDC Order Administration
444 Whitney Street
Northboro, MA 01532

Mail Stop/Location: NR02-1/J6

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EK-01586-12-82-V4700

PC300 TT-31

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title MINIMUM CONFIGURATION/COLOR GRAPHICS ON PRO						Tech Tip No. PC300-TT-23
Processor Applicability P C 3 0 0		Cross Reference VR241 - TT-03				Tech Tip Rev A / Page 1 of 1
Author JOHN H. LEEDS JR.			Mgr./Supv. Approval Barry Tondreault			
Location MAYNARD, MA		Mail Stop M'.05-2/T94				Date 7-1-84
CSSE Approval Carl Amie						Date 20-Nov-84
FSPSG APPROVAL						Date

The minimum configuration for color graphics on the PR0325/350 is as follows:

PR0325 or PR0350

VR241-A Color Monitor

MSC11-CK Add on memory (for a total of 512KB of memory)

Extended Bit Map option (EBO) Board 54-15146-00

Extended Bit Map option (EBO) Cable 17-00303-00

Color Monitor Cable (6ft) BCC03-02 17-00284-00

Note: The color monitor will work only as a monochrome monitor without the EBO Board.

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TT-PC300 TT-32

digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category Terminals
Title New procedure for running PRO/TMS Communication Test Services program under Maintenance Services V2.0						Tech Tip No. PC300-TT-24
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference DTC11-A/B-TT-04				Tech Tip Rev A / Page 1 of 1
Author Bob Larsen			Mgr./Supv Approval Harry Sutton			
Location Maynard, MA		Mail Stop PKO3-1/10B				Date 10/4/84
CSSE Approval						Date 10/10/84

To run the PRO/TMS Communication Test Services application diskette (Remote Data loopback test or keypad test) with V2.0 of the diskette based Maintenance Services, the user must first run the Update Maintenance Services program. This program will integrate the module with the rest of the Maintenance Services package and it will also copy the version 2 TMS driver onto the PRO/TMS Communication Test Service diskette. This will allow PRO/TMS Communication Test Service to be run as a separate application with V2.0 diskette based systems. (not running the Update program, will cause the software to hang if the application is run.)

Once the Update Maintenance Service program has been run (on V2.0), the PRO/TMS Communication Test Service diskette can no longer be run on the V1.7 Maintenance diskette.

All future versions of Maintenance Services will also be worked this way. Running the Update Maintenance Service program will write the appropriate TMS driver onto the PRO/TMS Communication Test Service diskette making the two compatible.

Maintenance Service V2.0 (diskette based) consists of:

	Part Number
PRO Installation and Maintenance V2.0 (Maintenance Application diskette)	BL-T308D-MH
PRO Maintenance Services V2.0 diskette 2 (Test Diskette)	BL-P751D-BH
P/OS Diskette V2.0 (System Diskette)	BL-V811C-BH

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PC300-TT-33

digital	FIELD SERVICE TECH TIP					Option Designator PC 300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title PIRACY PROTECTED SOFTWARE/ID PROM						Tech Tip No. PC300-TT-25
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 4
Author DAVID OLIVER			Mgr./Supv. Approval			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 30-Oct-84
CSSE Approval						Date 30-Oct-84
FSPSG APPROVAL						Date

PROBLEM:

Piracy Protected Applications Software installed on the PRO 325, PRO 350, PRO 380 and PRO IVIS will not run after the System Module is replaced. This happens because the number programmed in the ID PROM on the replacement System Module does not match the ID number the software expects to see.

SOLUTION:

- Swap the socketed ID PROM from the old System Module to the new System Module. (See figure 1 and 2)

  Whenever a KDF11-CA/CB/CC or KDJ11-CA System Module is replaced, swap the ID PROMs.

PROCEDURE:

- The ID PROM is located in position E127 on the KDF11-CA/CB/CC. (See Figure 1)

- The PRO 380's ID PROM is located in position E60 on the KDJ11-CA. (See Figure 2)

- On the KDF11-CA/CB/CC and the KDJ11-CA it is necessary to remove the daughter cards to gain access to the PROM. The PROM is in a 16 pin socket located between the card cage and a daughter card connector. There is not much space, so care should be taken when removing and re-installing the PROM.

- On some older PRO 325 and PRO 350 System Modules, the ID PROM is soldered to the board. If this is the case, or if the ID PROM is destroyed during the installation process, call your Customer Support Center.

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The Customer Support Center will instruct the field engineer or how to re-bond the software. Unfortunately, not all Piracy Protected Software can be re-bonded. In some cases the Customer Support Center will send replacement software which must then be installed on the customer's machine.

If the customer is running protected software purchased from a vendor other than Digital, the customer should contact the vendor for assistance.

o Replacement PROMs cannot be ordered from Stockroom 17. If a PROM is needed take it from another System Module. The KDF11-CA/CB/CC and the KDJ11-CA all use the same ID PROM.

BACKGROUND:

During the software installation process, the System Module's ID number is written onto the diskettes that are used to load the software. The ID number is also written into the software image loaded on the hard disk. Whenever Piracy Protected Software is re-installed or run, a check is made to determine if the ID number embedded in the software matches that of the ID PROM on the System Module.

Bonding prevents the user from installing the software on more than one machine. In addition, a mismatch between the ID PROM and the software is created whenever the System Module is replaced. This mismatch prevents the software from running, hence the reason for this Tech Tip. Swapping the ID PROM from the defective System Module to the new, replacement System Module will eliminate the problem.

NOTE:
The following message will appear on the user's Professional monitor if s/he attempts to install or run a copy protected application on a CPU other than the one on which the application was originally installed:

THIS SOFTWARE IS BONDED TO THE CPU OF THE PROFESSIONAL ON WHICH IT WAS ORIGINALLY INSTALLED. THE SOFTWARE IS PROVIDED WITH A SINGLE-USER LICENSE FOR A SINGLE CPU.

IF YOUR PROFESSIONAL'S CPU HAS BEEN REPLACED, IN THE U.S. PLEASE CALL 1-800-DEC-8000. IN ALL OTHER COUNTRIES, CONTACT THE SUPPORT CENTER IN YOUR AREA.

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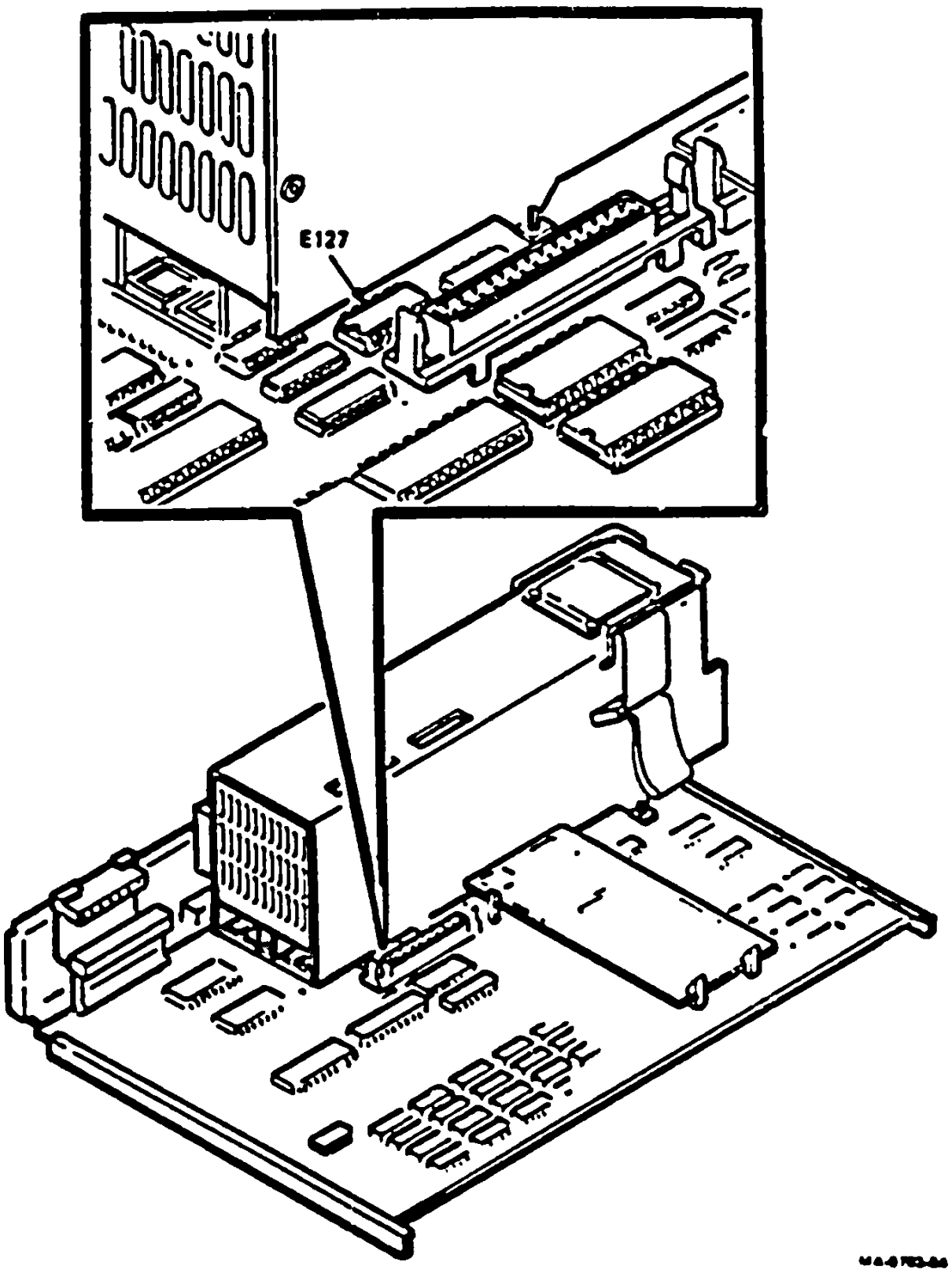
1 CSP.4-TT-35

digital	FIELD SERVICE TECH TIP	Option Designator PC 300	
	Continuation Sheet	Category TERMINALS	
Title PIRACY PROTECTED SOFTWARE/ID PROM		Tech Tip No. PC300-TT-25	
Processor Applicability P | C | 3 | 0 | 0 | | |	Cross Reference N/A	Tech Tip Rev A	Page 3 of 4



(Figure 1) KDF11-CA/CB/CC ID PROM LOCATION "E127"

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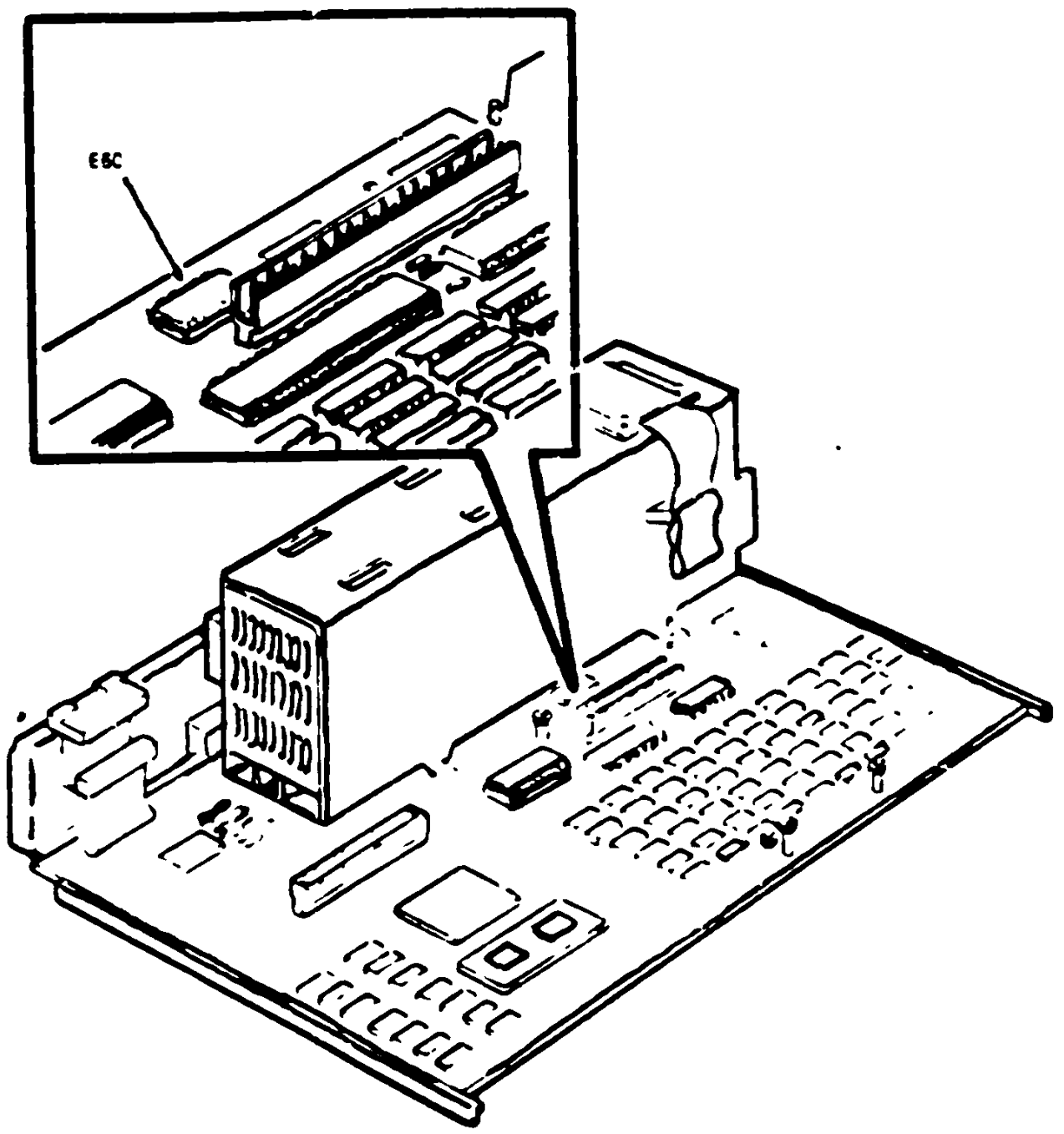
For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2

PC 300-TT-36

digital	FIELD SERVICE TECH TIP Continuation Sheet	Option Designator PC 300 Category TERMINALS
Title PIRACY PROTECTED SOFTWARE/ID PROM		Tech Tip No. PC300-TT-25
Processor Applicability P C 3 0 0	Cross Reference N/A	Tech Tip Rev A Page 3 of 4



(Figure 2) KDJ11/CA ID PROM LOCATION E60"

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For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2

digital	FIELD SERVICE TECH TIP					Option Designator PC 300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title NEW CONTROLLER PART NUMBER FOR RD52						Tech Tip No. PC300-TT- 26
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval RON BOGUE			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 11-3-84
CSSE Approval GARY HOUDESHELL						Date 11/5/84
FSPSG Approval						Date

With the introduction of the RD52-A Hard Disk Drive for the PRO 300 System Family, a new hard disk controller must be used with this drive. The new controller should be used when replacing the controller on an RD52 Subsystem. The RD52 controller DEC part number is 54-15134-01. When replacing the controller module on an RD50 or RD51 subsystem, use DEC part number 54-15134-00.

The RD52 hard disk controller module can be identified by looking at the component side (Side 1) of the module. On the right side of the module, the number "5415134" is in etch just above the connector handle. If there is an ink stamped "-01" beside this number, the controller is for the RD52 Drive. If there is no "-01" stamp, the controller is for the RD50 or RD51 Drive.

For more information on the RD52 Hard Disk Drive, reference Speed Bulletin #335 or Tech Tip #RD52-A-TT-001.

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digital	FIELD SERVICE TECH TIP					Option Designator PC 300	
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS	
Title RELEASE OF MAINTENANCE SERVICES VERSION 2.0						Tech Tip No. PC300-TT-27	
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A	Page 1 of 3
Author RON CAPRIO			Mgr/Supv Approval RON BOGUE				
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 11/3/84	
CSSE Approval GARY HOUDESHELL						Date 11/5/84	
FSPSG APPROVAL						Date	

The Maintenance Services Application Package Version 2.0 has been released and is now available from the SDC. The entire Diagnostic Package can be ordered using DEC Part Number QBA01-A3*or individual diskettes can be ordered using the following Part Numbers:

DEC P/N	Description
BL-V811C-BH	P/OS Diskette System V2.0
BL-T308D-MH	Maintenance Services Application V2.0
BL-P751D-BH	Maintenance Services Diskette 2 V2.0

Version 2.0 of Maintenance Services is the first release of the Diagnostic Package that supports the PRO 380 system. Previous versions of the package support PRO 325 and PRO 350 only. The Maintenance Services Package MUST be run via the floppy diskette drive and should never be loaded or run from the hard disk drive.

To run Maintenance Services via the floppy diskette drive, do the following:

1. Turn the Power Switch to the 0 (OFF) position on the PC325, PC350, or PC380.
2. Insert the "P/OS Diskette System V2.0" diskette into Drive 1 (Top Slot).
3. Turn the Power Switch to the 1 (ON) position.
4. If Self-Test completes successfully, the P/OS Diskette Based Operating System will be loaded automatically. This will override the operating system on the hard disk (if present).
5. When the instruction appears on the screen to remove the system diskette and insert an application diskette into Drive 1, the application diskette to be inserted is "Maintenance Services Application V2.0". Press "Resume".
6. The message "Please insert the diskette labeled Maintenance Diskette 2 in disk Drive 2" should now appear on the screen. Insert "Maintenance Services Diskette 2" into Drive 2 and press "Resume".

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7. The Maintenance Services Menu should now appear on the screen. The menu items can be run as described in the "Professional 350 or 380" Pocket Service Guide.

8. When use of the Maintenance Services Application has been completed, return to the Maintenance Services Menu. Then, press "EXIT". The message "Application Completed Successfully" should appear on the screen. The diskettes may be removed at this time.

9. To start an operating system on the hard disk (if present), simply cycle Power "OFF" and then "ON" again.

The following additional changes have been made beginning with Version 2.0 of the Maintenance Services Package:

1. The "Test Diskette" shipped with previous releases of this package has been replaced with "Maintenance Services Diskette 2". This new diskette comes with files resident on the diskette. Therefore, if the diskette becomes damaged, a new copy must be ordered. New copies cannot be made as was previously possible with the old "Test Diskette" (Reference Tech Tip Number PC300-TT-10).

2. Two new selections have been added to the Base Maintenance Services Package. The first is "Minidisk Block Check". Minidisk Block Check will be displayed on the Maintenance Services Main Menu in both Customer Mode and Field Service Mode. This routine reads each block of any P/OS Initialized Floppy Diskette to determine if "new" bad blocks are present that are not logged in the P/OS Bad Block File. In Customer Mode, at the end of the test, a message will be displayed saying no bad blocks were detected or new bad blocks have been detected and the diskette must be re-initialized. In Service Mode, the test is the same as in Customer Mode except that test results are more detailed, reporting the number of bad blocks in the P/OS Bad Block File and the number of new bad blocks found. The second new selection is "RX Speed Test". RX Speed Test is only selectable in Service Mode. The RX Speed Test is a routine used to check the RX Drive spindle motor speed to insure that drive speed is in tolerance. This routine was designed for future use and requires a ROM change to the RX Controller Module. No RX Subsystem in the field today has this ROM change. The ROM change will be implemented if and when PRO 300 Product Management decides to offer formatting capability.

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TPC300-TT-40

If the RX controller's ROM code is below the proper revision level (which is the case with all of them at this time) and this test is selected, the message "Your Floppy Controller Does Not Support This Function" will be displayed on the screer. If and when the supporting ROM code to run this routine is released, a subsequent Tech Tip will be released explaining how this routine runs and how to identify the proper ROM code revision level.

*NOTE: The Maintenance Services Diagnostic Package can be ordered under DEC Part Number QBA01-A3 or QBA65-A3. The only difference between these packages is that Kit QBA01 comes with a one year customer warranty letter while Kit QBA65 comes with a 90 day customer warranty letter.

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PC300-TT-41

DECUS	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category PERSONAL COMPUTERS
Title DECNA - CONFIGURATION/DOCUMENTATION						Tech Tip No. PC300-TT-42
Processor Applicability P | C | 3 | 0 | 0 | - | 1		Cross Reference DECNA-TT-01			Tech Tip Rev A	Page 1 of 1
Author BOB LARSEN			Mgr./Supv. Approval HARRY SUTTON			
Location MAYNARD, MA		Mail Stop PKO3-1/10B			Date 12/20/84	
CSSE Approval GARY HOUDESHELL					Date 12/19/84	
FSPSG APPROVAL					Date	

DECNA CONFIGURATION

DECNA (Ethernet Interface) consists of the following assemblies:

	Logic Board	54-15987-01
*	Transceiver Cable	17-00612-01
	Loopback Connector	12-22196-01

* Notes: Page 73 of the PC350 Pocket Service Guide lists an outdated part number for the Tranceiver Cable. The proper part number for this cable is as specified in this Tech Tip.

DECNA DOCUMENTATION

The following is a list of currently available DECNA documentation:

DECNA Installation/Owners Manual	EK-DECNA-IN-001
DECNA Field Maint. Print Set	MP-01895-01
DECNA Illustrated Parts Breakdown	EK-DECNA-IP-001
Pocket Service Guide	EK-PC350-PS-003
Technical Manual	EK-PC350-TM-002
PRO/DECNA Maint. Services V1.0 (Diag. Diskette)	BL-BL47A-BH

DECNA MAINTENANCE COURSE

Linear Video Field Maintenance Course	EY-2016E-VU-001

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digital	FIELD SERVICE TECH TIP					Option Designator PC300
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS
Title TESTING THE COLOR MONITOR ON PC325						Tech Tip No. PC300-TT-29
Processor Applicability P | C | 3 | 0 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author JOHN H. LEEDS, JR.			Mgr /Supv. Approval PON BOGUE			
Location MAYNARD / MILL		Mail Stop ML05-2/T94				Date 4-8-85
CSSE Approval RON BOGUE						Date
FSPSG APPROVAL						Date

PROBLEM: There is no documentation describing how to get the color patterns on a PC325 when running Maintenance Services.

SOLUTION: The Field Service Engineer must select color monitor in Setup Mode prior to running the Maintenance Services Application.

To run Maintenance Services via the floppy diskette drive, do the following:

1. Turn the Power Switch to the 0 (OFF) position on the PC325, PC350, or PC380.

2. Insert the "P/OS Diskette System V2.0" diskette into Drive 1 (Top Slot).

3. Turn the Power Switch to the 1 (ON) position.

4. If Self-Test completes successfully, the P/OS Diskette Based Operating System will be loaded automatically. This will override the operating system on the hard disk (if present).

5. When the instruction appears on the screen to remove the System diskette and insert an application diskette into Drive 1, first, press the Setup key and select color monitor. (Note: To test the Color Monitor, you must have the Extended Bit Map Option (EBO) present in the system.) Press the Exit key, then remove the system diskette from Drive 1; now insert the application diskette "Maintenance Services Application V2.0" in Drive 1 and press the Resume key.

6. The message "Please insert the diskette labeled Maintenance Diskette 2 in disk Drive 2" should now appear on the screen. Insert 'Maintenance Services Diskette 2" into Drive 2 and press 'Resume".

7. The Maintenance Services Menu should now appear on the screen. The menu items can be run as described in the "Professional 350 or 380" Pocket Service Guide.

8. Select "Bar Patterns" from the Maintenance Services Menu.

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If help is needed further, move the arrow to the Menu selection and press Help.

When use of the Maintenance Services Application has been completed, return to the Maintenance Services Menu. Then, press "EXIT". The message "Application Completed Successfully" should appear on the screen. The diskettes may be removed at this time.

9. To start an operating system on the hard disk (if present), simply cycle Power "OFF" and then "ON" again.

The Maintenance Services Application Package Version 2.0 has been released and is now available from the SDC. The entire Diagnostic Package can be ordered using DEC Part Number QBA01-A3* or individual diskettes can be ordered using the following Part Numbers:

DEC P/N	Description
BL-V811C-BH	P/OS Diskette System V2.0
BL-T308D-MH	Maintenance Services Application V2.0
BL-P751D-BH	Maintenance Services Diskette 2 V2.0

Version 2.0 of Maintenance Services is the first release of the Diagnostic Package that supports the PRO 380 system. Previous versions of the package support PRO 324 and PRO 350 only. The Maintenance Services Package MUST be run via the floppy diskette drive and should never be loaded or run from the hard disk drive.

The "Test Diskette" shipped with previous releases of this package has been replaced with "Maintenance Services Diskette 2". This new diskette comes with files resident on the diskette. Therefore, if the diskette becomes damaged, a new copy must be ordered. New copies cannot be made as was previously possible with the old "Test Diskette" (Reference Tech Tip Number PC300-TT-10).

* NOTE: The Maintenance Services Diagnostic Package can be ordered under DEC Part Number QBA01-A3 or QBA65-A3. The only difference between these packages is that Kit QBA01 comes with a one year customer warranty letter while Kit QBA65 comes with a 90 day customer warranty letter.

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PC300-TT-44

digital	FIELD SERVICE TECH TIP					Option Designator PC 300
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	36 BIT	Category TERMINALS
Title FORMAT ERROR ON INITIAL FORMATTING						Tech Tip No PC300-TT-30
Processor Applicability P C 3 0 0		Cross Reference RCD50-TT-04 RCD51-TT-03				Tech Tip Rev A / Page 1 of 1
Author JOHN H. LEEDS, JR.			Mgr Supv Approval			
Location MAYNARD MILL		Mail Stop ML05-2/T38				Date APRIL 25, 1985
CSSE Approval						Date 6/12/85
FSPSG APPROVAL						Date

An error may occur when formatting a hard disk (RD50, RD51, RD52). The failure is characterized as "ID not found".

C10030
000401

Slot 1 would be highlighted

This error is due to header CRC bytes being written early, therefore corrupting the sector ID. This problem may occur during formatting of the hard disk drive.

The RD controller would fail because of a timing shift while the 8X300 is writing the ID filed during a format. The microcode observed in the failing condition showed that the 8X300 was not waiting long enough for BDONE to be acknowledged. Therefore, between writing the address field and cylinder info, the 8X300 skips a byte. E29 contains a byte counter, which is cleared by the 8X300.Cylinder, head, secter and CRC info is now written 1 byte earlier on the disk. The result is an improper format on the hard disk (and in the case of returned controllers from the field, it would manifest as a N.P.F.).

The Spec for BDONE has been ECO'ed to tighten the tolerances on the E29 chip. Returned modules from the field are screened for this condition. All existing stock of RD controllers have been rescreened for this failure mode. All new products being built have the ECO'ed E29 chips.

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PC300-TT-45

Field Service **TECH TIP**

digital™

Category Disks Rev A

Title RD51 Reliability Spec

Option PC300

Cross Reference RD51-TT-05

TECH TIP No PC300-TT-31

Problem/Solution

In the PRO350 Technical Manual Volume II, the reliability specification on RD51 has been typeset wrongly.

Doc Name: Professional 300 series Technical Manual
Doc Id : EK-PC300-V2-001
Doc Date: 01-July-85
Page : 6-34
Para : 6.6.2.2
Subject : Reliability Specifiaction for RD51

Wrongly Typeset As Follows

Error Rates

Soft error rate	1 per 1010 bits read
Hard error rate	1 per 1012 bits read
Seek error rate	1 per 106 seeks

Should Have Been Typeset As Follows

Error Rates

Soft error rate	1 per 10^{10} bits read
Hard error rate	1 per 10^{12} bits read
Seek error rate	1 per 10^{6} Seeks

Approvals		
Author Raghu Minisandram	ESD&P TECH TIP Coordinator Oya Koray	CSSE Raghu Minisandram
Author's Manager Crutis Smith		Field Service Product Safety
Release Date 20 December 1985		Revision A

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PC300-TT-46

Field Service **TECH TIP**

digital™

Category Terminals Rev A

Title RD51 Reliability Spec

Option PC300

Cross Reference RD51-TT-06

TECH TIP No PC300-TT-32

Problem/Solution

IN THE PRO350 TECHNICAL MANUAL VOLUME II, THE RELIABILITY SPECIFICATION ON RD51 HAS BEEN TYPESET WRONGLY.

DOC NAME: PROFESSIONAL 300 SERIES TECHNICAL MANUAL
DOC ID : EK-PC300-V2-001
DOC DATE: 01-JULY-85
PAGE : 6-34
PARA : 6.6.2.2
SUBJECT : RELIABILITY SPECIFICATION FOR RD51

WRONGLY TYPESET AS FOLLOWS

Error Rates

Soft error rate	1 per 1010 bits read
Hard error rate	1 per 1012 bits read
Seek error rate	1 per 106 seeks

SHOULD HAVE BEEN TYPESET AS FOLLOWS

Error Rates

Soft error rate	1 per 10^{10} bits read
Hard error rate	1 per 10^{12} bits read
Seek error rate	1 per 10^{6} seeks

Approvals		
Author Raghu Minisandram	ESDeP TECH TIP Coordinator Bruce J. Conley	CSSE David Oliver
Author's Manager Dorothy Mandau		Field Service Product Safety
Release Date 21 January 1986		Revision A

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EN-01584-/4.C568

PC300-TT-47

Field Service **TECH TIP**

digital™

Non DEC Authorized Add-on

Title: PC325-TT-02, PC350-TT-11, PC380-TT-02, IVIS-TT-01

Cross Reference:

Category: Terminals Rev: A

Option: PC300

TECH TIP No: PC300-TT-33

Problem/Solution

NON-DEC AUTHORIZED ADD-ON KEYSWITCH

It has been discovered through investigation that a security key switch that is advertised for use on DEC's personal computers does not meet the primary power disconnect device requirements of that application. Additionally, there may be certain safety risks involved in installation, use and service where this switch is involved.

The key switch is manufactured by:

PC Security Enterprises
Newton Centre, Ma.

The product trade name is: Power Lock 1000

CAUTION

This product is not a DEC authorized add-on part and is not to be installed by DEC field personnel. There are no exceptions to this. The following is the position of the corporatioin and customers should be discouraged from using this product if inquiries are made.

"The product is not a Digital authorized add-on part. The product does not meet Digital's power requirements for a primary power disconnect device. Use of this product in Digital's personal computers may result in failure of the PC and/or the switch."

Approvals

Author	ESD&P TECH TIP Coo	CSSE
John H. Leeds Jr.	Bruce J. Conl	John H. Leeds Jr.
Author s Manager: Ronald Bogue		Field Service Product Safety
Release Date: 03 February 1986		Revision: A

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PC300-TT-48

Title Non DEC Authorized Add-on

Category Terminals Rev A
Option PC300
TECH TIP No PC300-TT-33

The fan replacement in an H7862 power supply which contains a Power Lock 1000 keyswitch will not be done. The complete H7862 power supply FRU must be replaced.

For removal and replacement of the H7862 power supply in any of the PC300 family of products refer to the following Pocket Service Guides;

PROFESSIONAL 380	EK-PC380-PS
PROFESSIONAL 325/350	EK-PC350-PS
PROFESSIONAL PC350 IVIS	EK-3IVIS-PS

NOTE:

An H7862 power supply with the Power Lock 1000 keyswitch installed becomes the property of the Customer. The Customer will pay full cost for the replacement H7862 power supply when such Power Lock has been installed. DEC Service Contracts and Warrenties do not cover damage caused by the installation, operation, or malfunction of the switch.

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Field Service **TECH TIP**

digital™

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC300

Cross Reference: (See page 3)

TECH TIP No.: PC300-TT-34

Problem/Solution

```
**********************************************
*                  CAUTION                   *
*                                            *
*  USE CORDSET FOR DISCONNECT DEVICE         *
*                                            *
**********************************************
```

Some customers have purchased the Key Switch manufactured by Pc Security Enterprises for use on the above mentioned products.

When servicing the products which have a Locking Key Switch ,do not rely on the Key Switch as a disconnect device. Use the cordset for a disconnect device to remove AC power before performing any service on these options.

The part # for the Key Switch is D84 and the FRU affected (pwr supply) is the H7862.

You are obligated to notify affected customers of Digital's concern for safe access and of Digital's Service Policy regarding FRU's which contain this switch. Attached is an addendum which can be re-typed on Digital letterhead and presented to the appropriate representative of affected customers. Such notice should precede new service contracts. For existing contracts, the appropriate customer representative must be notified either by mail or at the next service call.

See also Tech-Tip# PC300-TT-33.

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Tom Wrenn	Bruce J. Conley	John Leeds
Author s Manager S. Hoyt		Field Service Product Safety
Release Date 31 September 1986		Revision A

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PC300-TT-34

Title Servicing Units with Locking Key Switch

Category Terminals Rev A
Option PC300
TECH TIP No. PC300-TT-34

THE FOLLOWING IS AN ADDENDUM:

SUBJECT: PowerLock 1000-RB

"Dear Customer:

You have either purchased, installed or made an inquiry to Digital regarding the PowerLock 1000-RB key switch manufactured by P.C. Security Enterprises of Newton, Ma.

The following is Digital's service policy with respect to this key switch.

Background

The PowerLock 1000-RB key switch is not a Digital approved add-on part for Rainbow, DECmate II or Professional model personal computers. This key switch does not meet Digital's power requirements for primary power disconnect devices. The use of this switch in the above personal computer products is a primary power disconnect application.

Use of this key switch in Digital's personal computers may result in failure of the key switch and/or the personal computer. Digital also believes that a risk of personal injury to operator or service personnel may exist in the event of such a failure or during access to service other parts within the unit.

For your continued protection, it is Digital's recommendation that access to any part contained within the unit's enclosure be preceded by removal of the power cord from the AC Power source (typically a wall outlet).

Digital Service Policy

Digital Field Service will not install this key switch product.

Digital Service Contracts and warranties do not cover, with either labor or materials, damage caused by the installation, operation, maintenance or malfunction of this key switch.

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

Title Servicing Units with Locking Key Switch

Category Terminals Rev A
Option PC300
TECH TIP No PC300-TT-34

Field replaceable units (FRU's) which have been modified by installation of this key switch are not eligible for exchange under Digital's Service Contracts or warranties. Modified FRU's which fail while under a Digital Service Contract or warranty will be removed by Field Service and left with the customer. They become the property of the customer. A replacement FRU must be purchased by the customer at standard prices. Digital will install the replacement FRU, but will not install the key switch.

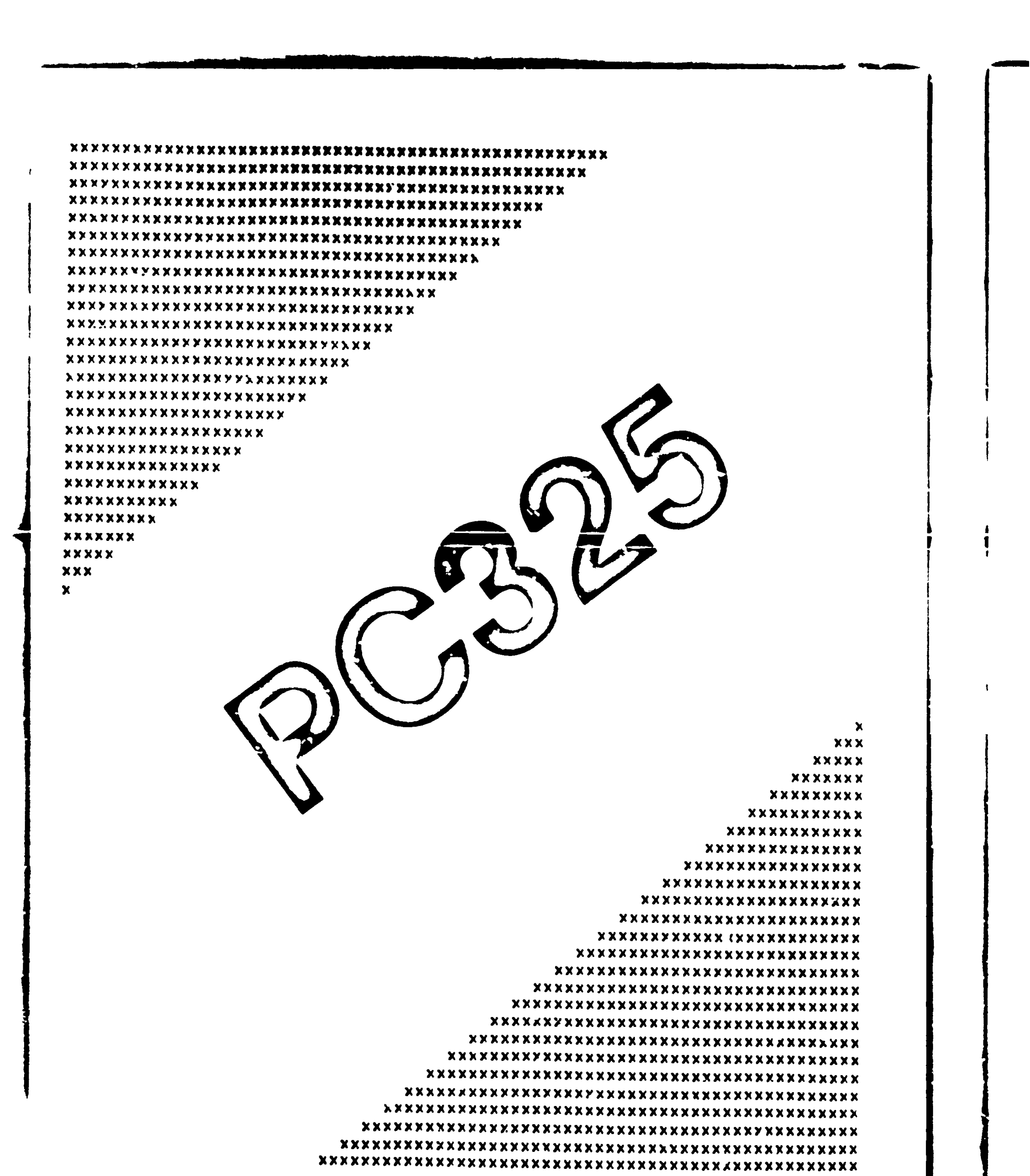
If you have questions regarding Digital's service policy, please contact _____.

Very truly yours,

Cross References:

PC325-TT-03
PC350-TT-14
PC380-TT-04
IVIS-TT-02

FOR INTERNAL USE ONLY: This information is the property of Digital Equipment Corporation
For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2


PC325

25-Aug-1987
PC325-INDEX.A
REV A

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC325--TT-01	A	12-May-83		PC325 system description
-PC325--TT-02	A	3-Feb-86	416	Non DEC authorized add-on
-PC325--TT-03	A	31-Sep-86	451	Servicing units/locking key switch
-PC325--TT-04	A	12-Mar-87	473	VR241 cable holder

digital

FIELD SERVICE TECH TIP

☐ 12 Bit ☒ 16 Bit ☐ 18 Bit ☐ 32 Bit ☐ 36 Bit

Option Designator PC325	
Category TERMINALS	
Title PC325 SYSTEM DESCRIPTION	**Tech Tip No.** PC325-TT-1
Processor Applicability P | C | 3 | 0 | 0 | | |	**Cross Reference** N/A
Tech Tip Rev A	**Page** 1 of 1
Author RON CAPRIO	**Mgr./Supv. Approval** Carl Olive
Location MAYNARD	**Mail Stop** MLO5-2/T53
Date 5-6-83	
OSS Approval GARY HOUDESHELL	**Date** 6 MAY 83
PSG Approval EDWARD KAY	**Date** May 12, 1983

THE PURPOSE OF THIS TECH TIP IS TO DESCRIBE THE DIFFERENCE BETWEEN THE PC325-D SYSTEM AND THE PC350-D SYSTEM. THE PC325 SYSTEM WILL BEGIN SHIPPING IN MAY, 1983. THIS SYSTEM IS FLOPPY DISKETTE BASED AND DOES NOT SUPPORT THE HARD DISK OPTION. THE SYSTEM MODULE FOR THE PC325 IS THE ONLY FRU THAT IS DIFFERENT FROM THE PC350 FRU'S. THE PC325 SYSTEM MODULE HAS BLOCKING CAPS ON SLOTS 1 AND 3 IN THE OPTION CARD CAGE THAT PREVENT THE USE OF THESE SLOTS. THIS IS THE ONLY FUNCTIONAL DIFFERENCE BETWEEN THE PC325 AND PC350 SYSTEM MODULES. ALL ON-BOARD CIRCUITRY AND ROM BASED FIRMWARE ARE IDENTICAL. TO ORDER PC325 SYSTEM MODULES FROM FIELD SERVICE LOGISTICS, THE FOLLOWING PART NUMBER SHOULD BE USED: KDF11-CB.

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For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2.

Field Service TECH TIP

digital™

Title	Non DEC Authorized Add-on PC300-TT-33 PC350-TT-11	Category	Terminals
		Option	PC325
Cross Reference	PC380-TT-02 IVIS-TT-01	TECH TIP No	PC325-TT-02
		Rev	A

Problem/Solution

NON-DEC AUTHORIZED ADD-ON KEYSWITCH

It has been discovered through investigation that a security key switch that is advertised for use on DEC's personal computers does not meet the primary power disconnect device requirements of that application. Additionally, there may be certain safety risks involved in installation, use and service where this switch is involved.

The key switch is manufactured by:

PC Security Enterprises
Newton Centre, Ma.

The product trade name is: Power Lock 1000

CAUTION

This product is not a DEC authorized add-on part and is not to be installed by DEC field personnel. There are no exceptions to this. The following is the position of the corporatioin and customers should be discouraged from using this product if inquiries are made.

"The product is not a Digital authorized add-on part. The product does not meet Digital's power requirements for a primary power disconnect device. Use of this product in Digital's personal computers may result in failure of the PC and/or the switch."

Approvals

Author John H. Leeds Jr.	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE John H. Leeds Jr.
Author s Manager Ronald Borgue		Field Service Product Safety
Release Date 03 February 1986		Revision A

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PC325-TT-3

Category Terminals Rev A

Title Non DEC Authorized Add-on

Option PC325

TECH TIP No. PC325-TT-02

The fan replacement in an H7862 power supply which contains a Power Lock 1000 keyswitch will not be done. The complete H7862 power supply FRU must be replaced.

For removal and replacement of the H7862 power supply in any of the PC300 family of products refer to the following Pocket Service Guides;

PROFESSIONAL 380	EK-PC380-PS
PROFESSIONAL 325/350	EK-PC350-PS
PROFESSIONAL PC350 IVIS	EK-PCIVIS-PS

NOTE:

An H7962 power supply with the Power Lock 1000 keyswitch installed becomes the property of the Customer. The Customer will pay full cost for the replacement H7862 power supply when such Power Lock has been installed. DEC Service Contracts and Warrenties do not cover damage caused by the installation, operation, or malfunction of the switch.

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC325-TT-4

Field Service **TECH TIP**

digital™

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC325

Cross Reference: (See page 3)

TECH TIP No.: PC325-TT-03

Problem/Solution

```
**********************************************
*                  CAUTION                   *
*                                            *
*  USE CORDSET FOR DISCONNECT DEVICE         *
*                                            *
**********************************************
```

Some customers have purchased the Key Switch manufactured by Pc Security Enterprises for use on the above mentioned products.

When servicing the products which have a Locking Key Switch ,do not rely on the Key Switch as a disconnect device. Use the cordset for a disconnect device to remove AC power before performing any service on these options.

The part # for the Key Switch is D84 and the FRU affected (pwr supply) is the H7862.

You are obligated to notify affected customers of Digital's concern for safe access and of Digital's Service Policy regarding FRU's which contain this switch. Attached is an addendum which can be re-typed on Digital letterhead and presented to the appropriate representative of affected customers. Such notice should precede new service contracts. For existing contracts, the appropriate customer representative must be notified either by mail or at the next service call.

See also Tech-Tip# PC300-TT-33.

Approvals		
Author: Tom Wrenn	ESD&P TECH TIP Coordinator: Bruce J. Conley	CSSE: John Leeds
Author's Manager: S. Hoyt		Field Service Product Safety
Release Date: 31 September 1986		Revision: A

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For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC325

TECH TIP No.: PC325-TT-03

THE FOLLOWING IS AN ADDENDUM:

SUBJECT: PowerLock 1000-RB

"Dear Customer:

You have either purchased, installed or made an inquiry to Digital regarding the PowerLock 1000-RB key switch manufactured by P.C. Security Enterprises of Newton, Ma.

The following is Digital's service policy with respect to this key switch.

Background

The PowerLock 1000-RB key switch is not a Digital approved add-on part for Rainbow, DECmate II or Professional model personal computers. This key switch does not meet Digital's power requirements for primary power disconnect devices. The use of this switch in the above personal computer products is a primary power disconnect application.

Use of this key switch in Digital's personal computers may result in failure of the key switch and/or the personal computer. Digital also believes that a risk of personal injury to operator or service personnel may exist in the event of such a failure or during access to service other parts within the unit.

For your continued protection, it is Digital's recommendation that access to any part contained with.. the unit's enclosure be preceded by removal of the power cord from the AC Power source (typically a wall outlet).

Digital Service Policy

Digital Field Service will not install this key switch product.

Digital Service Contracts and warranties do not cover, with either labor or materials, damage caused by the installation, operation, maintenance or malfunction of this key switch.

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

Title Servicing Units with Locking Key Switch

Category Terminals Rev A

Option PC325

TECH TIP No. PC325-TT-03

Field replaceable units (FRU's) which have been modified by installation of this key switch are not eligible for exchange under Digital's Service Contracts or warranties. Modified FRU's which fail while under a Digital Service Contract or warranty will be removed by Field Service and left with the customer. They become the property of the customer. A replacement FRU must be purchased by the customer at standard prices. Digital will install the replacement FRU, but will not install the key switch.

If you have questions regarding Digital's service policy, please contact _____.

Very truly yours,

Cross References:

PC300-TT-34
PC350-TT-14
PC380-TT-04
IVIS-TT-02

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For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2.

PC 325-TT-7

Field Service TECH TIP

digital™

Category Computers Rev A

Title VR241 Cable Holder

Option PC325

Cross Reference (See below)

TECH TIP No PC325-TT-04

Problem/Solution

The RGB video cable does not stay securely fastened to the back of the monitor resulting in premature cable failure.

Velcro does not hold and cable hangs from BNC connectors. Cable failure is apparent by loss of one or more colors or by a tinted white color if the monitor is being used in monochrome mode.

Solution:

A plastic cable holder has been designed that will attach to the back of the cabinet and securely hold the color cable.

The part number of the cable holder kit is 70-23351-01 and is available from SR17. The kit contains an installation sheet the cable holder and a plastic insert that fits into the housing of the video cable. The insert contains the Digital Logo and was included with the kit for aesthetic purposes.

The cable holder is now being packaged with the RGB video cable that is used with the VR241. However, many monitors already in the Field do not have the cable holder. CSSE recommends that the Field install the cable holders on monitors (VR241's) that do not have the holder installed.

Cross References:

PC100-TT-12
VT241-TT-16
PC278-TT-08
PC350-TT-15
PC380-TT-05

Approvals		
Author Paul Petherick	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Ron Francoeur
Author's Manager Ron Francoeur		Field Service Product Safety
Release Date 12 March 1987		Revision A

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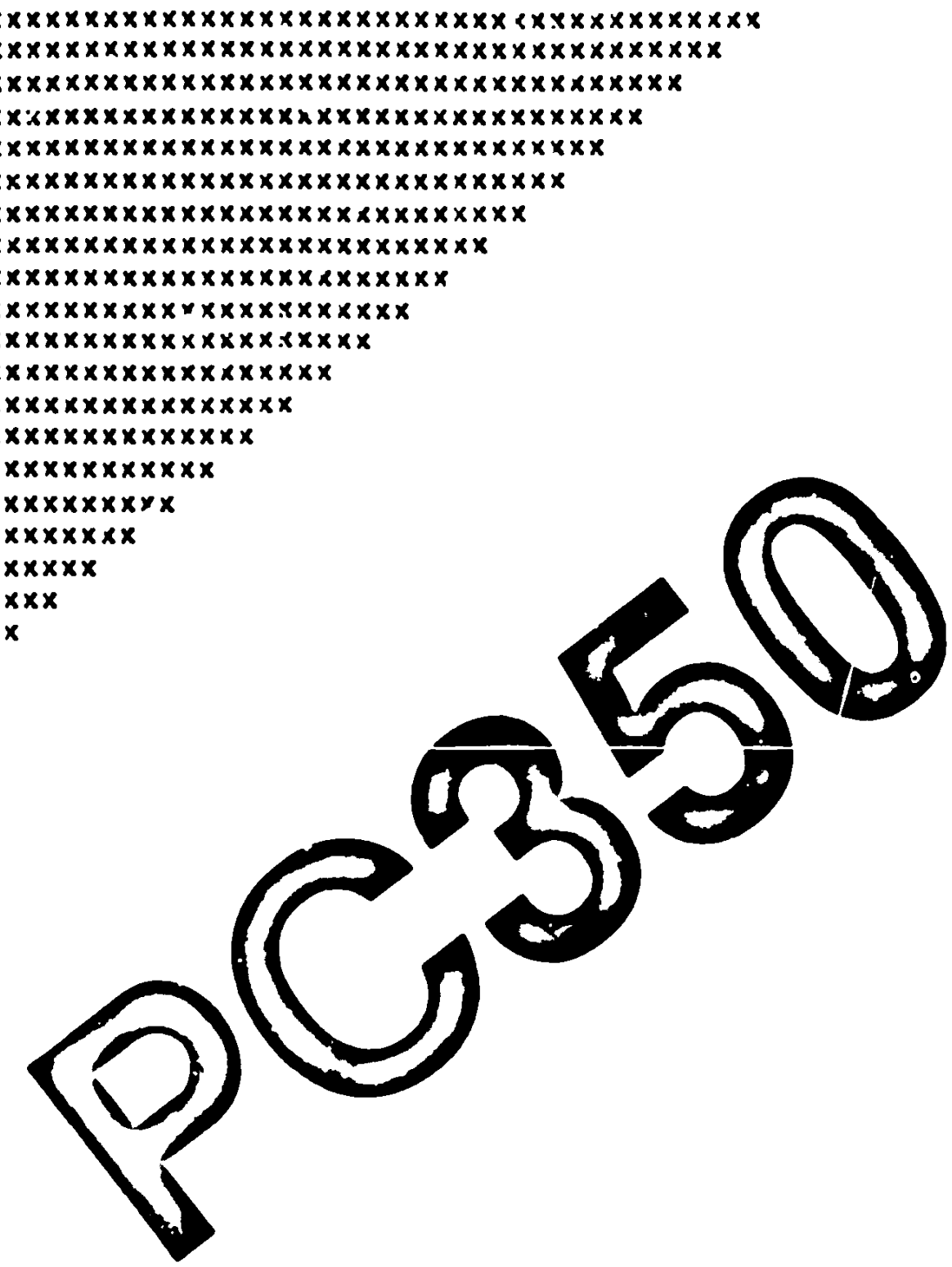
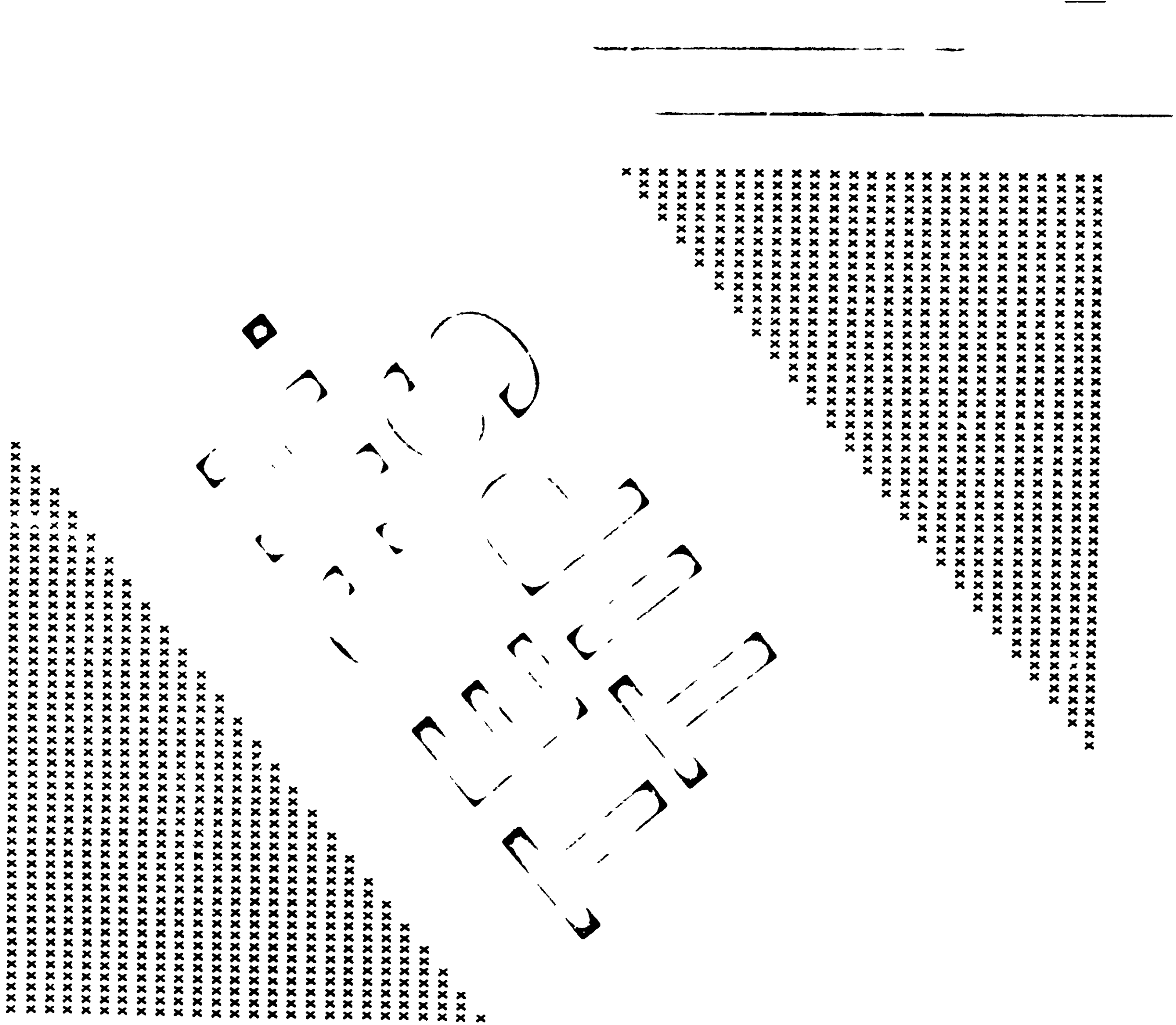
For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC325-11 A


PC350



5-Jan-1988
PC350-INDEX.D
REV D

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC350--TT-01	A	10-Feb-83		PC300 series documentation/diag
-PC350--TT-02	A	10-Feb-83		Spares switch for PC100/278/300
-PC350--TT-03	A	10-Feb-83		Handling Winchester drive
-PC350--TT-04	A	10-Feb-83		Printer port loopback connector
-PC350--TT-05	A	10-Feb-83		RD50 drive spares on PC350
-PC350--TT-06	A	10-Feb-83		Opt & memory module re-seating
-PC350--TT-07	A	10-Feb-83		PC350 top cover access knockout
-PC350--TT-08	A	24-Mar-83		PC350/printer configuration
-PC350--TT-09	A	9-Jan-84	318	P/OS format error override capabil
-PC350--TT-10	A	26-Jan-84	318	Big disk block check routine
-PC350--TT-11	A	3-Feb-86	416	Non DEC authorized add-on
-PC350--TT-12	A	1-Apr-86	424	PRO/DECNA maintenance diskette
-PC350--TT-13	A	9-Sep-86	447	Printing problems/PRO 350
-PC350--TT-14	A	31-Sep-86	451	Servicing units/locking key switch
-PC350--TT-15	A	12-Mar-87	473	VR241 cable holder
-PC350--TT-16	A	13-Oct-87	502	RT11 disk corrpt prof maint serv

digital	FIELD SERVICE TECH TIP					Option Designator PC350	
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category TERMINALS	
Title PC300 SERIES DOCUMENTATION/DIAGNOSTICS						Tech Tip No. PC350-TT-1	
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A	Page 1 of 1
Author JOHN LEEDS			Mgr Supv. Approval				
Location MAYNARD		Mail Stop MLO5-2/T53				Date 2-2-83	
CSSE Approval		CARL CLINE				Date 04-FEB-83	
PSG Approval		EDWARD KAY				Date 2/10/83	

MAINTENANCE DOCUMENTATION

THE FOLLOWING IS A LIST OF DOCUMENTATION FOR THE PC300 SERIES THAT IS AVAILABLE THROUGH PRINTING AND CIRCULATION SERVICES:

DOCUMENT TITLE	ORDER NUMBER
PRO300 SERIES POCKET SERVICE GUIDE	EK-PC350-PS
PC350 TECHNICAL MANUAL	EK-PC350-TM
PC350 ILLUSTRATED PARTS BREAKDOWN	EK-PC350-IP
PC350 FIELD MAINTENANCE PRINT SET	MP-01394-00
K201 FIELD MAINTENANCE PRINT SET	MP-01395-00
VR201 FIELD MAINTENANCE PRINT SET	MP-01410-00
VC241 FIELD MAINTENANCE PRINT SET	MP-01471-00
KEF11 FIELD MAINTENANCE PRINT SET	MP-01473-00

DIAGNOSTICS

DIAGNOSTICS MEDIA FOR THE PC300 FAMILY IS AVAILABLE THROUGH SDC (SOFTWARE DISTRIBUTION CENTER). THEY ARE AS FOLLOWS:

PRO SYSTEM MAINTENANCE DISKETTE	BL-T308A-MH
PRO BOOTABLE SYSTEM MAINTENANCE DISKETTE	BL-N622A-BH
PRO PRE-INITIALIZED DISKETTE (FOR USE AS A SCRATCH DISKETTE)	BL-N892A-RH

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DECTECH	**FIELD SERVICE TECH TIP**					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title SPARES SUITCASE FOR PC300/PC278/PC100						Tech Tip No. PC350-TT-2
Processor Applicability P C 3 0 0 1		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author DAN MENDELSOHN			Mgr./Supv. Approval			
Location MAYNARD		Mail Stop MLO5-2/T53				Date 1-28-83
CSSE Approval		GARY HOUDESHELL				Date 4-Feb-83
PSG Approval		EDWARD KAY				Date 2/10/83

THE SPARES KIT FOR THE PROFESSIONAL 350 CONSISTS OF A SUITCASE AND A PC300 CHASSIS (BA-50). THESE PARTS CAN BE ORDERED THROUGH LOGISTICS. REFER TO THE SECOND PAGE FOR A DIAGRAM ON HOW TO ASSEMBLE THE SPARES KIT. THE TOP COVER IS NOT NEEDED. THE ORDER NUMBER OF THE BA50-A AND SUITCASE IS A2-M0624.

FOR THE DECMATE II AND RAINBOW SPARES KIT, ORDER A BA25 AND A SMALLER SUITCASE. THE ORDER NUMBER FOR THIS KIT IS A2-M0639.

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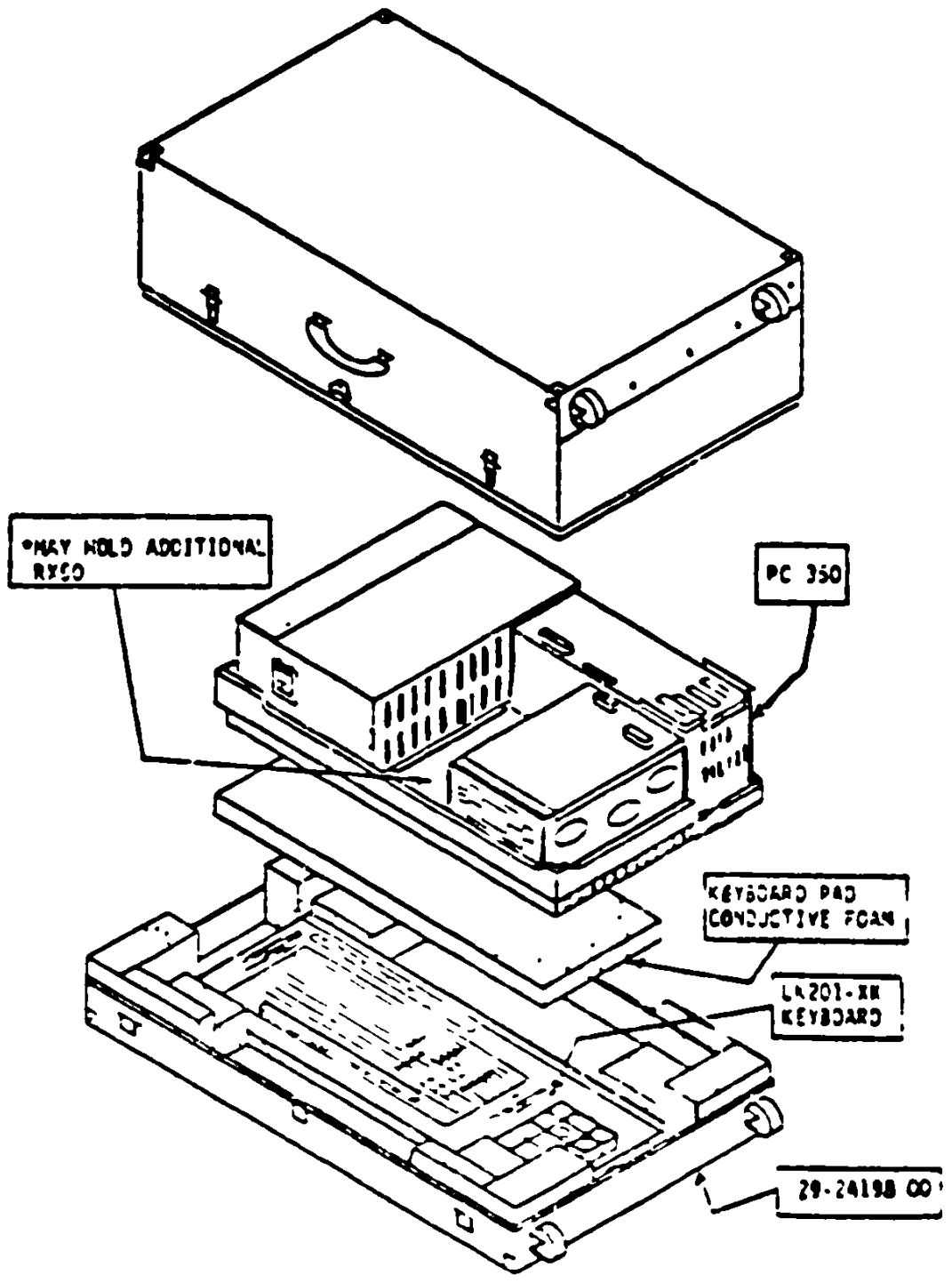
DIGITAL	**FIELD SERVICE TECH TIP** **Continuation Sheet**	**Option Designator** PC350	
		Category TERMINALS	
Title SPARES SUITCASE FOR PC300/PC278/PC100		**Tech Tip No.** PC350-TT-2	
Processor Applicability P C 3 0 0	**Cross Reference** N/A	**Tech Tip Rev** A	**Page** 2 of 2

TITLE
PKG PC 350 C-D KIT PACKING DIAGRAM



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PC350 TT 4

[redacted]

FIELD SERVICE TECH TIP

☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT

Option Designator: PC350

Category: TERMINALS

Title: HANDLING WINCHESTER DRIVE

Tech Tip No.: PC350-TT-3

Processor Applicability: P | C | | 3 | 0 | 0 | |

Cross Reference: RD50 -TT-1

Tech Tip Rev: A

Page: 1 of 1

Author: DAN MENDELSOHN

Mgr./Supv. Approval: CARL CLINE

Location: MILL/MAYNARD

Mail Stop: MLO5-2/T53

Date: 1-27-83

CSSE Approval: Carl Cline CARL CLINE — **Date:** 08-FEB-83

PSG Approval: Edward Kay EDWARD KAY — **Date:** 2/10/83

DO NOT PUT THE RD50 DRIVE INTO THE PC350 SPARES SUITCASE FOR STORAGE OR TRANSPORTATION BECAUSE OF THE FRAGILITY OF THE DRIVE. THE DRIVE SHOULD BE STORED IN THE SHIPPING CONTAINER. REFER TO RD50 -TT-1 FOR MORE DETAILS.

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For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2.

DECUSCO	FIELD SERVICE TECH TIP					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title PRINTER PORT LOOPBACK CONNECTOR						Tech Tip No. PC350-TT-4
Processor Applicability P C 3 0 0		Cross Reference PC278-TT-2				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval			
Location MAYNARD		Mail Stop MLO5-2/T53				Date 2-1-83
CSSE Approval GARY HOUDESHELL						Date 2/2/83
PSG Approval EDWARD KAY						Date 2/10/83

A PRINTER PORT EXTERNAL LOOPBACK CONNECTOR IS NOT YET IN PLACE FOR PC350 AND PC278. WHEN IT IS AVAILABLE IT WILL BE ADDED TO THE RSL (WITH DEC PART NUMBER) AND FOLLOWED UP BY A TECH TIP ANNOUNCING IT'S AVAILABILITY. EXTERNAL LOOPBACK MAY BE PERFORMED IN THE MEANTIME BY JUMPERING THE FOLLOWING PINS AT THE 9 PIN CONNECTOR AT THE REAR OF EITHER SYSTEM BOX:

1) JUMPER PINS 2 AND 3 TOGETHER
2) JUMPER PINS 5 AND 6 TOGETHER

IF IT IS DESIRED TO BUILD A PRINTER PORT LOOPBACK, ORDER ANY ONE OF THE FOLLOWING 9 PIN FEMALE CONNECTORS AND JUMPER PINS 2 TO 3 AND PINS 5 TO 6:

1) TRW PART NUMBER - DEM 9S

OR

2) AMP PART NUMBER - 205734-1
205734-2
205734-3
OR
205734-4

FOR INTERNAL USE ONLY: This information is property of Digital Equipment Corporation
For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2.

PC350-TT-6

digital	**FIELD SERVICE TECH TIP**					Option Designator: PC350
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category: TERMINALS
Title: RD50 DRIVE SPARES ON PC350						Tech Tip No.: PC350-TT-5
Processor Applicability: P C 3 0 0		Cross Reference: N/A				Tech Tip Rev: A / Page: 1 of 1
Author: RON CAPRIO			Mgr./Supv. Approval: Carl Cline			
Location: MAYNARD	Mail Stop: MLO5-2/T53					Date: 1-27-83
CSSF Approval: Gary Houdeshell	GARY HOUDESHELL					Date: 2/2/83
PSG Approval: Edward Kay	EDWARD KAY					Date: 10 FEB 83

SPARE RD50 HARD DISK DRIVES SHIPPED TO FIELD SERVICE FROM WOBURN ARE FORMATTED BUT NOT INITIALIZED. BECAUSE PC350 SYSTEM DIAGNOSTICS ARE LAYERED ON THE P/OS, IF DIAGNOSTICS ARE RUN ON THE SPARE DRIVE PRIOR TO INITIALIZATION, THE DRIVE WILL FAIL INDICATING A READ ERROR. THEREFORE, ALL SPARE DRIVES MUST BE INITIALIZED TO P/OS PRIOR TO RUNNING DIAGNOSTICS. TO INITIALIZE THE RD50, DO THE FOLLOWING:

1) GET THE FOLLOWING TWO DISKETTES FROM THE CUSTOMER'S P/OS PACKAGE:

   A) "PRO SYSTEM DSKT"
   B) "PRO SETUP DSKT"

2) INSERT "PRO SYSTEM DSKT" IN DRIVE SLOT 1 OF THE RX50 AND "PRO SETUP DSKT" IN DRIVE SLOT 2 OF THE RX50.

3) TURN THE POWER SWITCH TO "ON".

4) FOLLOW THE INSTRUCTIONS PRINTED ON THE VIDEO DISPLAY. (THE PROCESS TAKES APPROXIMATELY 10 MINUTES).

5) WHEN THE "CHANGE DISKETTES" MENU APPEARS AND INSTRUCTIONS ARE TO REMOVE THE DISKETTE FROM DRIVE 2, POWER THE SYSTEM "OFF" AND REMOVE BOTH DISKETTES.

6) YOU MAY NOW RUN THE BOOTABLE SYSTEM MAINTENANCE DISKETTE AND RUN THE SYSTEM DIAGNOSTICS.

NOTE: THIS PROCEDURE SHOULD ONLY BE REQUIRED ON NEW OR SPARE RD50 DRIVES. IF TESTING AN EXISTING CUSTOMER'S DRIVE, IT SHOULD ALREADY BE INITIALIZED. ALSO, THE ABOVE PROCEDURE IS FOR RUNNING EXTENDED DIAGNOSTICS, THE ROM BASED POWER-UP SELF-TEST DOES NOT REQUIRE DRIVE INITIALIZATION.

FOR INTERNAL USE ONLY. This information is property of Digital Equipment Corporation
For more information on writing or approving a Tech Tip, see Administration Tech Tip Number 2.

PC350 TT-7

CSSE	**FIELD SERVICE TECH TIP**					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title OPTION AND MEMORY MODULE RE-SEATING						Tech Tip No. PC350-TT-6
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author JOHN LEEDS			Mgr/Supv. Approval			
Location MAYNARD		Mail Stop MLO5-2/T53				Date 2-2-83
CSSE Approval		CARL CLINE				Date 04-FEB-83
PSG Approval		EDWARD KAY				Date 2/10/83

DUE TO TOLERANCE PROBLEMS BETWEEN THE SYSTEM MODULE CARD CAGE AND THE OPTION BOARDS, MODULES MAY NEED TO BE RE-SEATED AFTER SHIPMENT. THIS SYMPTOM HAS BEEN NOTED ON A SMALL QUANTITY OF SYSTEMS. SOME MEMORY MODULES WILL COME LOOSE IF THE SYSTEMS ARE SHIPPED UPSIDE DOWN.

SHORT TERM SOLUTION: RE-SEAT THE MODULES.

LONG-TERM SOLUTION: ENGINEERING IS WORKING ON A FIX TO PREVENT THIS FROM HAPPENING.

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digital	FIELD SERVICE TECH TIP					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title PC350 TOP COVER ACCESS KNOCKOUT						Tech Tip No. PC350-TT-7
Processor Applicability P C 1 3 0 0 1		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr /Supv. Approval			
Location MAYNARD		Mail Stop MLO5-2/T53				Date 2-1-83
CSSE Approval		GARY HOUDESHELL				Date 2/2/83
PSG Approval		EDWARD KAY				Date 3/10/83

THE TOP COVER BEZEL ON THE PC350 HAS A KNOCKOUT PANEL THAT REMOVES WITH TWO SCREWS. THIS IS INTENDED FOR REMOVAL WHEN ADDING A SECOND RX50 DRIVE TO THE SYSTEM (NOT YET A MARKETABLE CONFIGURATION). SOME CUSTOMERS ARE REMOVING THIS PANEL TO EXPOSE THE RD50 HARD DISK IF INSTALLED. THIS IS NOT RECOMMENDED BECAUSE AIRFLOW THROUGH THE SYSTEM BOX IS SIGNIFICANTLY DECREASED SINCE THE RD50 DRIVE DOES NOT MATE FLUSH WITH THE BEZEL. IF THIS SITUATION IS SEEN AT A CUSTOMER SITE, IT SHOULD BE RECOMMENDED TO RE-INSTALL THE KNOCKOUT PANEL TO PREVENT OVERHEATING OF THE SYSTEM BOX.

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digital	FIELD SERVICE TECH TIP					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title PC350/PRINTER CONFIGURATION						Tech Tip No. PC350-TT-8
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 3
Author JOHN LEEDS			Mgr./Supv. Approval			
Location MILL / MAYNARD		Mail Stop ML05-2/T53				Date 4 MARCH 1983
CSSE Approval						Date 23-MAR 83
PSG Approval						Date March 24, 1983

AFTER THE PC350 HAS COMPLETED THE POWER-UP SELF-TEST, THE FIRMWARE ...TIALIZES THE PRINTER PORT AS FOLLOWS:

4800 BAUD (9600 BAUD IF CONSOLE CABLE IS ATTACHED)
1 STOP BIT
PARITY DISABLED
8 BITS PER CHARACTER
NORMAL OPERATION
RTS ENABLED
FORCE BREAK DISABLED
RECEIVER ENABLED
DTR ENABLED
TRANSMITTER ENABLED

HE PRINTER CABLE FOR THE PC300 IS THE BCC05 (17-00300-XX)

THE FOLLOWING IS A LIST OF PRINTER CONFIGURATIONS:

PRINTER CONFIGURATION

SWITCH	LA50 POSITIONS		
SW1-1	OPEN	SW2-1	OPEN
SW1-2	OPEN	SW2-2	OPEN
SW1-3	OPEN	SW2-3	OPEN
SW1-4	OPEN	SW2-4	OPEN
SW1-5	CLOSED	SW2-5	OPEN
SW1-6	OPEN	SW2-6	OPEN
SW1-7	OPEN	SW2-7	CLOSED
SW1-8	OPEN	SW2-8	OPEN

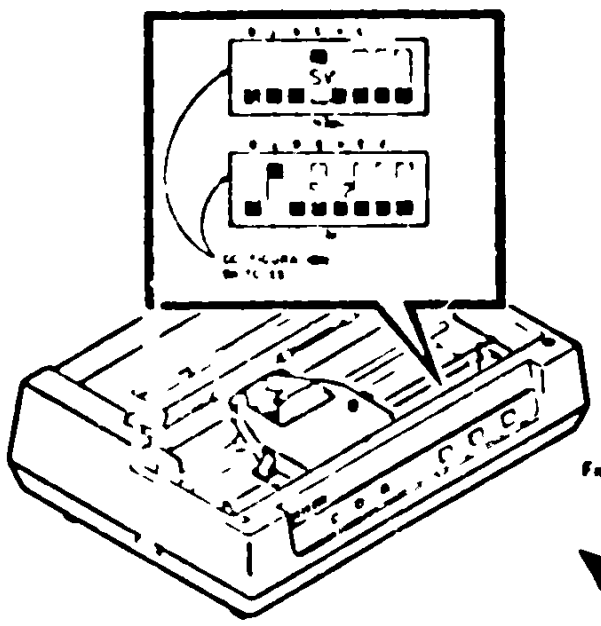
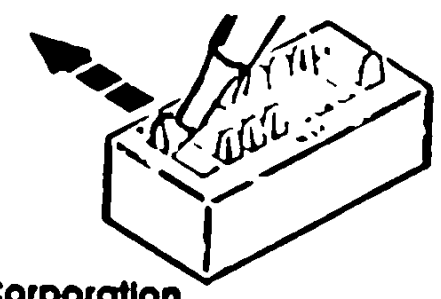


Figure 3-2 LA50 Printer Configuration Switches



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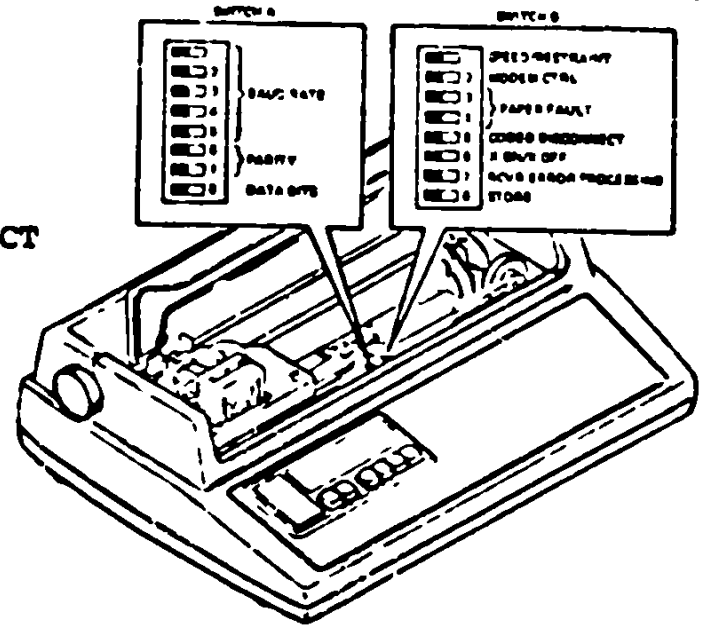
LA100-PC

AUTO-ANSWERBACK:DISABLED
DISCONNECT ON EOT:DISABLED
PAPER FAULT PROCESSING:DO NOT CONNECT
PARITY:8/N
RECEIVER ERROR:PRINT CHARACTER
SPEED (BPS):4800
AUTO XON/XOFF:ENABLED
MODEM CONTROL: NO MODEM

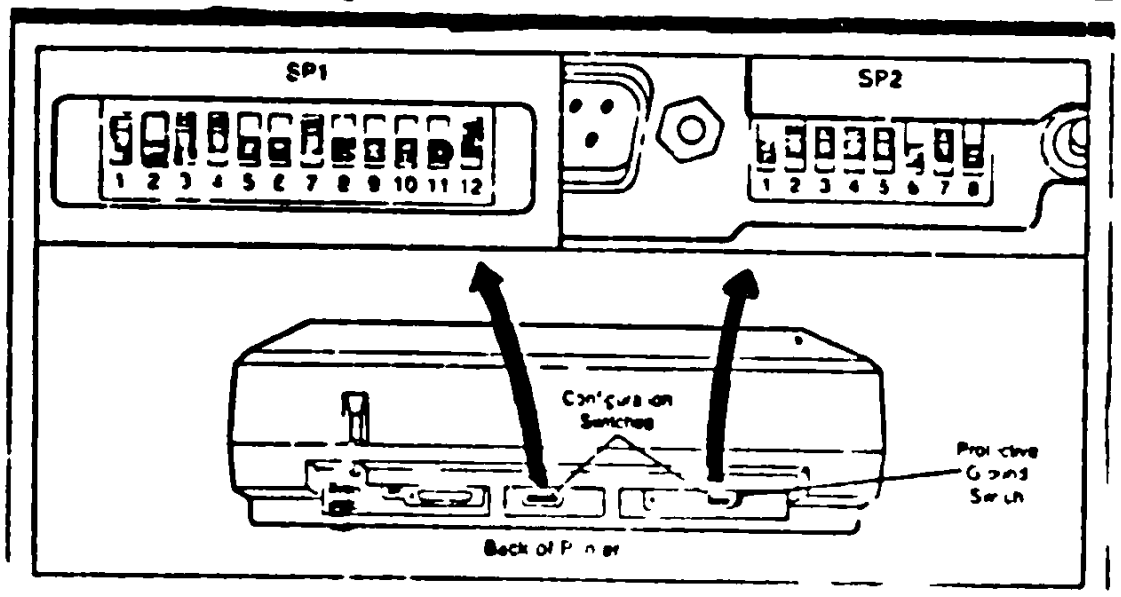
CONTROL-RESTRAINT MODE
C1 RECEIVE:ENABLED
C1 TRANSMIT:DISABLED



LQP02

SP1-1	UP	SP2-1	DOWN
SP1-2	DOWN	SP2-2	UP
SP1-3	UP	SP2-3	UP
SP1-4	UP	SP2-4	UP
SP1-5	DOWN	SP2-5	UP
SP1-6	DOWN	SP2-6	DOWN
SP1-7	UP	SP2-7	UP
SP1-8	DOWN	SP2-8	DOWN
SP1-9	DOWN		
SP1-10	DOWN		
SP1-11	DOWN		
SP1-12	UP		

System Configuration

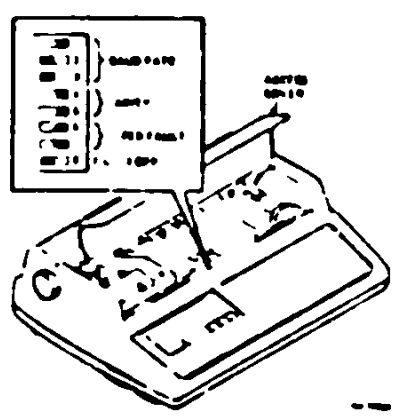


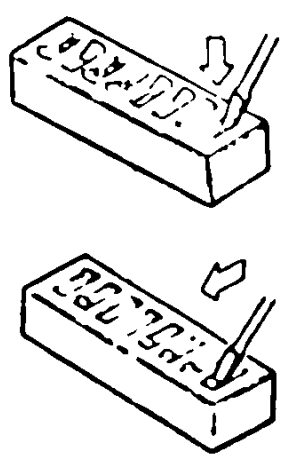
THE FOLLOWING PRINTERS, ALTHOUGH NOT SUPPORTED ON THE PC350, WILL WORK IF SET UP AS FOLLOWS:

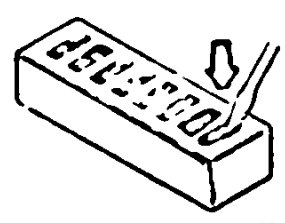
LA34-WA

PARITY: S
SPEED: 4800
GO: US
G1: US
CPI: 10
LPI: 6
DISCONNECT: NO

XON/XOFF: Y
MODEM: N







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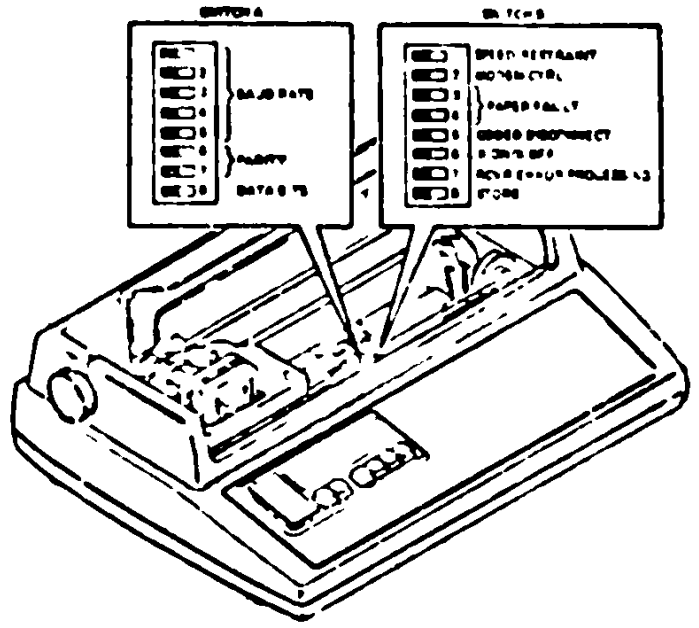
PC350-TT-11



LA100

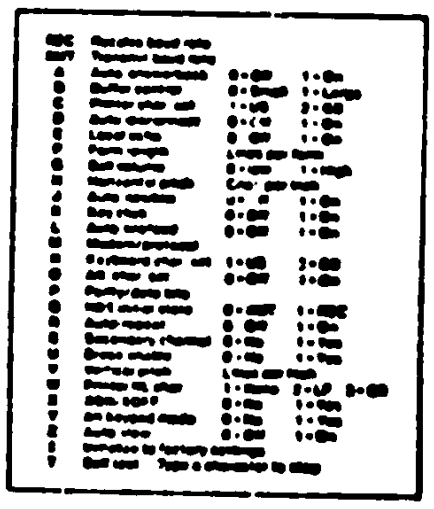
AUTO-ANSWERBACK: DISABLED
DISCONNECT ON EOT: DISABLED
PAPER FAULT PROCESSING:XOFF (IF ENABLED)
PARITY: 7/S
RECEIVER ERROR:PRINT ERROR BLOCK
SPEED(BPS):4800
AUTO XON/XOFF: ENABLED
MODEM CONTROL: NO MODEM CONTROL-RESTRAINT MODE

LA120

AT PRESENT THE LA120 WILL ONLY WORK ON THE PC350 FOR PRINT SCREEN, NOT FOR PRINTING FILES. THE SETUP IS AS FOLLOWS:

REC	4800
XMT	4800
A	0
B	1
C	1
D	1
E	0
F	66
G	1
H	10
J	1
K	0
L	0
M	1
N	1
O	1
P	1
Q	0
R	1
S	0
U	1
V	6
W	1
X	1
Y	0
Z	1

The following sample SET-UP label defines the status message



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PC350-TT-12

digital	FIELD SERVICE TECH TIP					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title P/OS FORMAT ERROR OVERRIDE CAPABILITY						Tech Tip No. PC350-TT-9
Processor Applicability P C 3 0 0		Cross Reference N/A				Tech Tip Rev A / Page 1 of 1
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML05-2/T94				Date 6 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date Jan 9, 1984
PSG Approval DAVE FALEN						Date

PRIOR TO THE RELEASE OF THE P/OS VERSION 1.7 HARD DISK OPERATING SYSTEM, IF THE ERROR CODE:

010013
000401

WAS DISPLAYED ON POWER UP, P/OS WOULD PROHIBIT ANY FORMATTING OF THE HARD DISK. THIS ERROR CODE IS AN INDICATION THAT THE HARD DISK'S FORMAT IS POTENTIALLY CORRUPTED. BEGINNING WITH THE RELEASE OF VERSION 1.7 OF P/OS, IF THE OPERATING SYSTEM READS THE ABOVE ERROR CODE, IT WILL ALLOW THE USER TO ATTEMPT TO REFORMAT THE HARD DISK. THIS FUNCTIONALITY WILL ASSIST IN REDUCING THE NUMBER OF RD DRIVES RETURNED FOR REPAIR SIMPLY BECAUSE THEY NEED TO BE REFORMATTED. IF THERE IS A GENUINE HARDWARE PROBLEM, THE FORMATTING ROUTINE WILL FAIL AND THE FAILING COMPONENT WILL HAVE TO BE ISOLATED AND REPLACED.

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PC350-TT-13

digital	FIELD SERVICE TECH TIP					Option Designator PC350
	☐ 12 BIT	☒ 16 BIT	☐ 18 BIT	☐ 32 BIT	☐ 36 BIT	Category TERMINALS
Title BIG DISK BLOCK CHECK ROUTINE						Tech Tip No. PC350-TT-10
Processor Applicability P | C | 3 | 0 | 0 | | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author RON CAPRIO			Mgr./Supv. Approval CARL CLINE			
Location MAYNARD/MILL		Mail Stop ML5-2/T94				Date 5 JANUARY 1984
CSSE Approval GARY HOUDESHELL						Date 1-26-84
PSG Approval DAVE FALEN						Date

A NEW ROUTINE CALLED "BIGDISK BLOCK CHECK" HAS BEEN ADDED TO THE MAINTENANCE SERVICES APPLICATION BEGINNING WITH VERSION 1.7. WHEN SELECTED, THIS TEST WILL READ EACH BLOCK ON THE HARD DISK TO DETERMINE IF THERE ARE NEW BAD BLOCKS ON THE HARD DISK AND IF P/OS SHOULD BE RE-INSTALLED. THIS TEST DOES NOT WRITE ON THE HARD DISK AND THEREFORE, NO INFORMATION PRESENT ON THE HARD DISK WILL BE DESTROYED. THE "BIGDISK BLOCK CHECK" CAN ONLY BE RUN ON HARD DISKS WITH P/OS INSTALLED.

WHEN EXECUTED IN 'CUSTOMER MODE" THE SCREEN WILL FLASH "WORKING" IN THE UPPER LEFT CORNER WITH A COUNT DOWN IN THE CENTER OF THE SCREEN. WHEN THE TEST COMPLETES, A SIMPLE STATUS WILL BE DISPLAYED THAT STATES EITHER NO CORRUPT BLOCKS HAVE BEEN FOUND OR NEW CORRUPT BLOCKS HAVE BEEN FOUND AND P/OS MUST BE RE-INSTALLED TO UPDATE THE P/OS BAD BLOCK FILE.

WHEN EXECUTED IN "SERVICE MODE" THE SCREEN WILL LOOK THE SAME AS IN "CUSTOMER MODE" WHILE THE PROGRAM IS EXECUTING. HOWEVER, THE STATUS DISPLAY AT THE END OF THE TEST IS MORE DETAILED. A CHART WILL BE SHOWN ON THE SCREEN AS FOLLOWS:

SERVICE MODE SUMMARY
BAD/CORRUPT BLOCK REPORT

FOUND ON HEAD:	0	1	2	3
P/OS BAD BLOCK FILE:	XX	XX	XX	XX
NEW CORRUPT BLOCKS:	XX	XX	XX	XX

P/OS SHOULD BE RE-INSTALLED IF NEW CORRUPT BLOCKS HAVE BEEN DETECTED IN ORDER TO UPDATE THE P/OS BAD BLOCK FILE.

*** CAUTION ***

MAKE SURE THAT ALL IMPORTANT CUSTOMER FILES HAVE BEEN BACKED UP BEFORE RE-INSTALLING P/OS. IF FILES ARE NOT BACKED UP PRIOR TO RE-INSTALLING P/OS, ALL DATA WILL BE LOST.

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1-PC350-TT-14

	FIELD SERVICE TECH TIP	Option Designator PC350
	Continuation Sheet	Category TERMI'
Title BIG DISK BLOCK CHECK ROUTINE		Tech Tip No. PC350-TT-10
Processor Applicability P | C | 3 | 0 | 0 | | | |	Cross Reference N/A	Tech Tip Rev A / Page 2 of 2

IT SHOULD BE NOTED THAT IF OVER 200 BAD BLOCKS ARE DETECTED, THIS ROUTINE SHOULD BE RUN SEVERAL TIMES TO SEE IF THE RESULTS ARE CONSISTENT. IF THE RESULTS ARE CONSISTENT, THE HARD DISK DRIVE IS PROBABLY DEFECTIVE AND SHOULD BE REPLACED. IF THE RESULTS ARE INCONSISTENT, THE RD CONTROLLER, RD READ/WRITE MODULE, SYSTEM MODULE, OR RD CABLES MAY BE DEFECTIVE.

THIS ROUTINE HAS BEEN DEVELOPED TO ASSIST THE FIELD SERVICE ENGINEER IN TROUBLESHOOTING PROBLEMS WITH THE HARD DISK SUBSYSTEM IN THE PC 350.

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PC350-TT-15

Field Service **TECH TIP**

digital™

Title	Non DEC Authorized Add-on PC300-TT-33 PC325-TT-02	Category	Terminals Rev A
Cross Reference	PC380-TT-02 IVIS-TT-01	Option TECH TIP No	PC350 PC350-TT-11

Problem/Solution

NON-DEC AUTHORIZED ADD-ON KEYSWITCH

It has been discovered through investigation that a security key switch that is advertised for use on DEC's personal computers does not meet the primary power disconnect device requirements of that application. Additionally, there may be certain safety risks involved in installation, use and service where this switch is involved.

The key switch is manufactured by:

PC Security Enterprises
Newton Centre, Ma.

The product trade name is: Power Lock 1000

CAUTION

This product is not a DEC authorized add-on part and is not to be installed by DEC field personnel. There are no exceptions to this. The following is the position of the corporatioin and customers should be discouraged from using this product if inquiries are made.

"The product is not a Digital authorized add-on part. The product does not meet Digital's power requirements for a primary power disconnect device. Use of this product in Digital's personal computers may result in failure of the PC and/or the switch."

Approvals		
Author John H. Leeds Jr.	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE
Author's Manager Ronald Bogue		Field Service Product Safety
Release Date 03 February 1986		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC350-TT-16

Title Non DEC Authorized Add-on

Category Terminals Rev A
Option PC350
TECH TIP No PC350-TT-11

The fan replacement in an H7862 power supply which contains a Power Lock 1000 keyswitch will not be done. The complete H7862 power supply FRU must be replaced.

For removal and replacement of the H7862 power supply in any of the PC300 family of products refer to the following Pocket Service Guides;

PROFESSIONAL 380	EK-PC380-PS
PROFESSIONAL 325/350	EK-PC350-PS
PROFESSIONAL PC350 IVIS	EK-0IVIS-PS

NOTE:

An H7862 power supply with the Power Lock 1000 keyswitch installed becomes the property of the Customer. The Customer will pay full cost for the replacement H7862 power supply when such Power Lock has been installed. DEC Service Contracts and Warrenties do not cover damage caused by the installation, operation, or malfunction of the switch.

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PC350-TT-17

Field Service TECH TIP

digital™

Title: PRO/DECNA Maint. Diskette P/N Corrections

Category: Computers

Rev: A

Option: PC350

Cross Reference: PC380-TT-03, DECNA-TT-02

TECH TIP No: PC350-TT-12

Problem/Solution

Both the PC350 and 380 Pocket Service Guides list an incorrect part number.

For the PRO/DECNA maintenance diskette, the correct P/N is ZBA03-C3.

In Document Number:

EK-PC350-PS-003 Page 73
Change QBA-03-L3 to ZBA03-C3

EK-PC380-PS-002 Page 91
Change QBA-03-L3 to ZBA03-C3

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Robert Larsen	Bruce J. Conley	Pon Caprio
Author's Manager Ron Francoeur		**Field Service Product Safety**
Release Date 1 April 1986		**Revision** A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC350-TT-18

Field Service **TECH TIP**

digital™

Category Systems Rev A

Title Printing Problems/PRO350 Option PC350

Cross Reference N/A TECH TIP No PC350-TT-13

Problem/Solution

PROBLEM: The LA50 or LA100 prints garbage during diagnostic testing, but operates normally in self-test mode.

CAUSE OF PROBLEM: A BCC08 printer cable is used instead of a BCC05 cable.

CORRECTION: Replace the BCC08 cable with a BCC05 printer cable.

REASON FOR FAILURE: Pin 8 and 9 of the BCC08 are shorted together. The CPU interprets this as a DL console connected for maintenance. The firmware now sets the default baud rate to "9600".

The maximum baud rate for the LA50 is "4800".

Note: If the LA100 is set to 9600 baud, the problem will not occur. When using a LA50, a BCC05 must always be used.

Approvals		
Author Arthur Brooks	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE John Leeds Jr.
Author s Manager John Leeds Jr.		Field Service Product Safety
Release Date 9 September 1986		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC350--TT-19

Field Service **TECH TIP**

digital™

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC350

Cross Reference: (See page 3)

TECH TIP No.: PC350-TT-14

Problem/Solution

```
**********************************************
*                  CAUTION                   *
*                                            *
*  USE CORDSET FOR DISCONNECT DEVICE         *
*                                            *
**********************************************
```

Some customers have purchased the Key Switch manufactured by Pc Security Enterprises for use on the above mentioned products.

When servicing the products which have a Locking Key Switch ,dc not rely on the Key Switch as a disconnect device. Use the cordset for a disconnect device to remove AC power before performing any service on these options.

The part # for the Key Switch is D84 and the FRU affected (pwr supply) is the H7862.

You are obligated to notify affected customers of Digital's concern for safe access and of Digital's Service Policy regarding FRU's which contain this switch. Attached is an addendum which can be re-typed on Digital letterhead and presented to the appropriate representative of affected customers. Such notice should precede new service contracts. For existing contracts, the appropriate customer representative must be notified either by mail or at the next service call.

See also Tech-Tip# PC300-TT-33.

Approvals		
Author Tom Wrenn	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE John Leeds
Author s Manager S. Hoyt		Field Service Product Safety
Release Date 31 September 1986		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC 350 TT-14

Title Servicing Units with Locking Key Switch

Category Terminals Rev A

Option PC350

TECH TIP No. PC350-TT-14

THE FOLLOWING IS AN ADDENDUM:

SUBJECT: PowerLock 1000-RB

"Dear Customer:

You have either purchased, installed or made an inquiry to Digital regarding the PowerLock 1000-RB key switch manufactured by P.C. Security Enterprises of Newton, Ma.

The following is Digital's service policy with respect to this key switch.

Background

The PowerLock 1000-RB key switch is not a Digital approved add-on part for Rainbow, DECmate II or Professional model personal computers. This key switch does not meet Digital's power requirements for primary power disconnect devices. The use of this switch in the above personal computer products is a primary power disconnect application.

Use of this key switch in Digital's personal computers may result in failure of the key switch and/or the personal computer. Digital also believes that a risk of personal injury to operator or service personnel may exist in the event of such a failure or during access to service other parts within the unit.

For your continued protection, it is Digital's recommendation that access to any part contained within the unit's enclosure be preceded by removal of the power cord from the AC Power source (typically a wall outlet).

Digital Service Policy

Digital Field Service will not install this key switch product.

Digital Service Contracts and warranties do not cover, with either labor or materials, damage caused by the installation, operation, maintenance or malfunction of this key switch.

FOR INTERNAL USE ONLY: This information is the property of Digital Equipment Corporation
For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2

Title Servicing Units with Locking Key Switch

Category Terminals Rev A

Option PC350

TECH TIP No. PC350-TT-14

Field replaceable units (FRU's) which have been modified by installation of this key switch are not eligible for exchange under Digital's Service Contracts or warranties. Modified FRU's which fail while under a Digital Service Contract or warranty will be removed by Field Service and left with the customer. They become the property of the customer. A replacement FRU must be purchased by the customer at standard prices. Digital will install the replacement FRU, but will not install the key switch.

If you have questions regarding Digital's service policy, please contact _____.

Very truly yours,

Cross References:

PC300-TT-34
PC325-TT-03
PC380-TT-04
IVIS-TT-02

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Field Service TECH TIP

digital™

Category Computers Rev A

Title VR241 Cable Holder

Option PC350

Cross Reference (See below)

TECH TIP No PC350-TT-15

Problem/Solution

The RGB video cable does not stay securely fastened to the back of the monitor resulting in premature cable failure.

Velcro does not hold and cable hangs from BNC connectors. Cable failure is apparent by loss of one or more colors or by a tinted white color if the monitor is being used in monochrome mode.

Solution:

A plastic cable holder has been designed that will attach to the back of the cabinet and securely hold the color cable.

The part number of the cable holder kit is 70-23351-01 and is available from SR17. The kit contains an installation sheet the cable holder and a plastic insert that fits into the housing of the video cable. The insert contains the Digital Logo and was included with the kit for aesthetic purposes.

The cable holder is now being packaged with the RGB video cable that is used with the VR241. However, many monitors already in the Field do not have the cable holder. CSSE recommends that the Field install the cable holders on monitors (VR241's) that do not have the holder installed.

Cross References:

PC100-TT-12
VT241-TT-16
PC278-TT-08
PC325-TT-04
PC380-TT-05

Approvals		
Author Paul Petherick	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Ron Francoeur
Author's Manager Ron Francoeur		Field Service Product Safety
Release Date 12 March 1987		Revision A

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[illegible] REF. [illegible]

PC350-TT-23

Field Service **TECH TIP**

digital

Title: RT11 Disk Corruption Professional Maintenance Services

Cross Reference: PC380-TT-06

Category: Systems

Option: PC350

Rev: A

TECH TIP No: PC350-TT-16

Problem/Solution

Running MAINTENANCE SERVICES on the following configuration *MAY* produce a problem with the directory structure of the hard disk.

Configuration----------

Machine : PROFESSIONAL 350 or PROFESSIONAL 380
Operating System: RT-11
Software producing the problem: Standalone (Boctable) Maintenance Services for the Professional Hardware.

Version 2 and 3 of the Maintainance Services for the Professional have the capability of running from diskette (i.e., Bootable media).

For P/OS, this presents no problem; for RT-11, there is a possible problem.

o Running the Maintenance Services allows 4 possible attempts to check the validity of either the hard disk or the hard disk subsystem.

The four possibilities are:

Customer mode:	Service mode:
Big Disk Block check	Big Disk Block check
System Unit tests	System Unit tests
- Hard disk subsystem	- Hard disk subsystem

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Joseph Ciuffini	Bruce J. Conley	John Leeds
Author s Manager		Field Service Product Safety
Release Date: 13 October 1987		Revision: A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC350-TT-24

Title RT11 Disk Corruption
Professional Maintenance
Services

Category Systems Rev A
Option PC350
TECH TIP No. PC350-TT-16

o The Hard Disk tests checks are handled as follows:

P/OS	non - P/OS
(a) Big Disk block check The file structure is tested for known bad blocks; new bad blocks are reported.	(a) Big Disk block check Maintenance Services does not find a P/OS structure on the disk and reports that fact. No further testing is done.
(b) System Unit test(s) Track 0 is used to write and then read sample data. If data read = data written, the subsystem passes.	(b) System Unit test(s) Track 0 (block 15) is used to write and read sample data. If data read = data written, the subsystem passes. ********** THIS IS THE PROBLEM CASE. ********** RT-11 uses a number of contiguous blocks as directory segments. If there are enough files on the hard disk that force using Block 15 as part of the directory structure, then running the System Unit test on the hard disk subsystem will corrupt the directory pointers.

RESOLUTION/RECOMMENDATION:

Under no case should a RT-11 hard disk be tested with the System Unit Test for hard disk subsystem.

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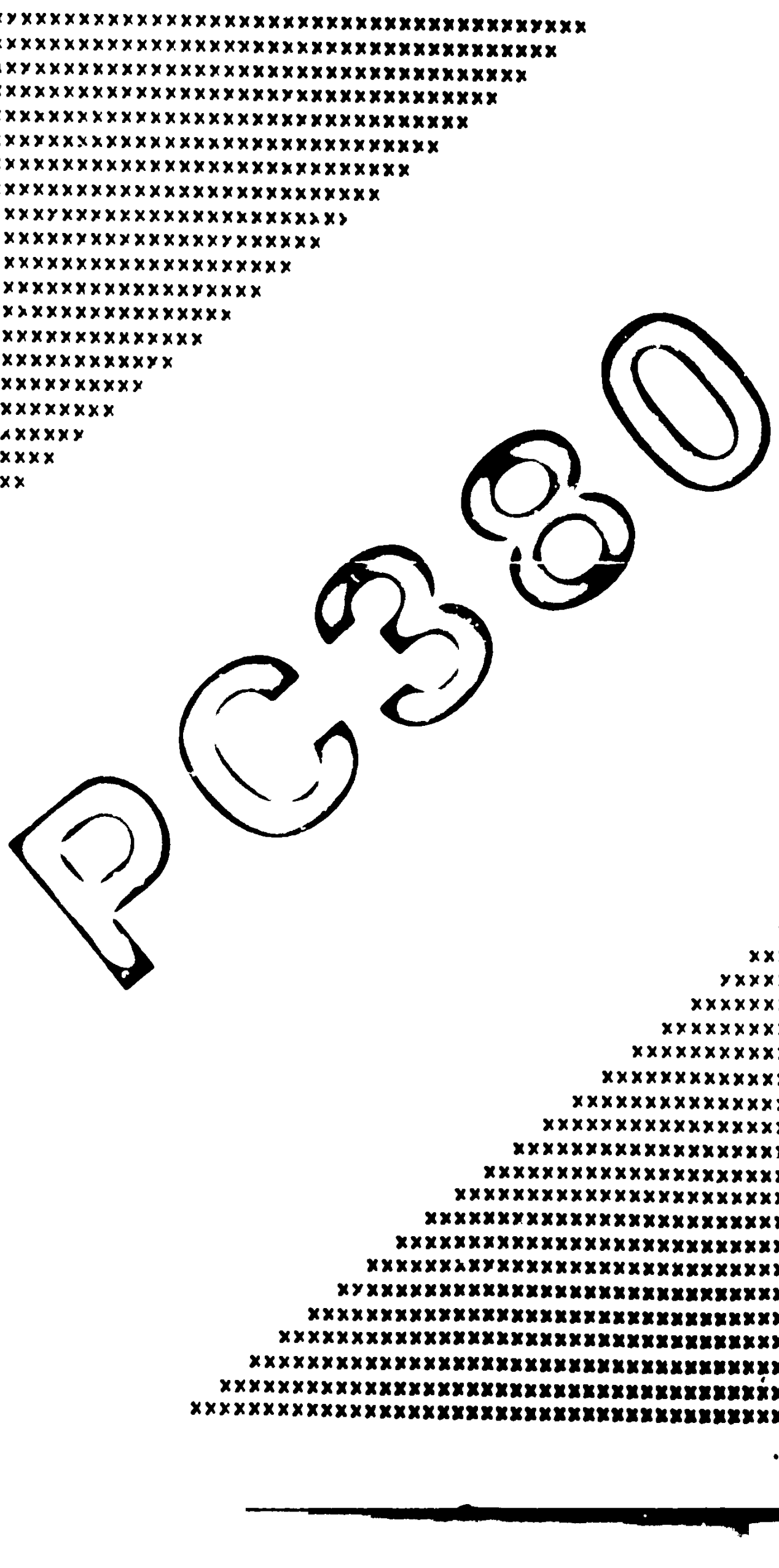
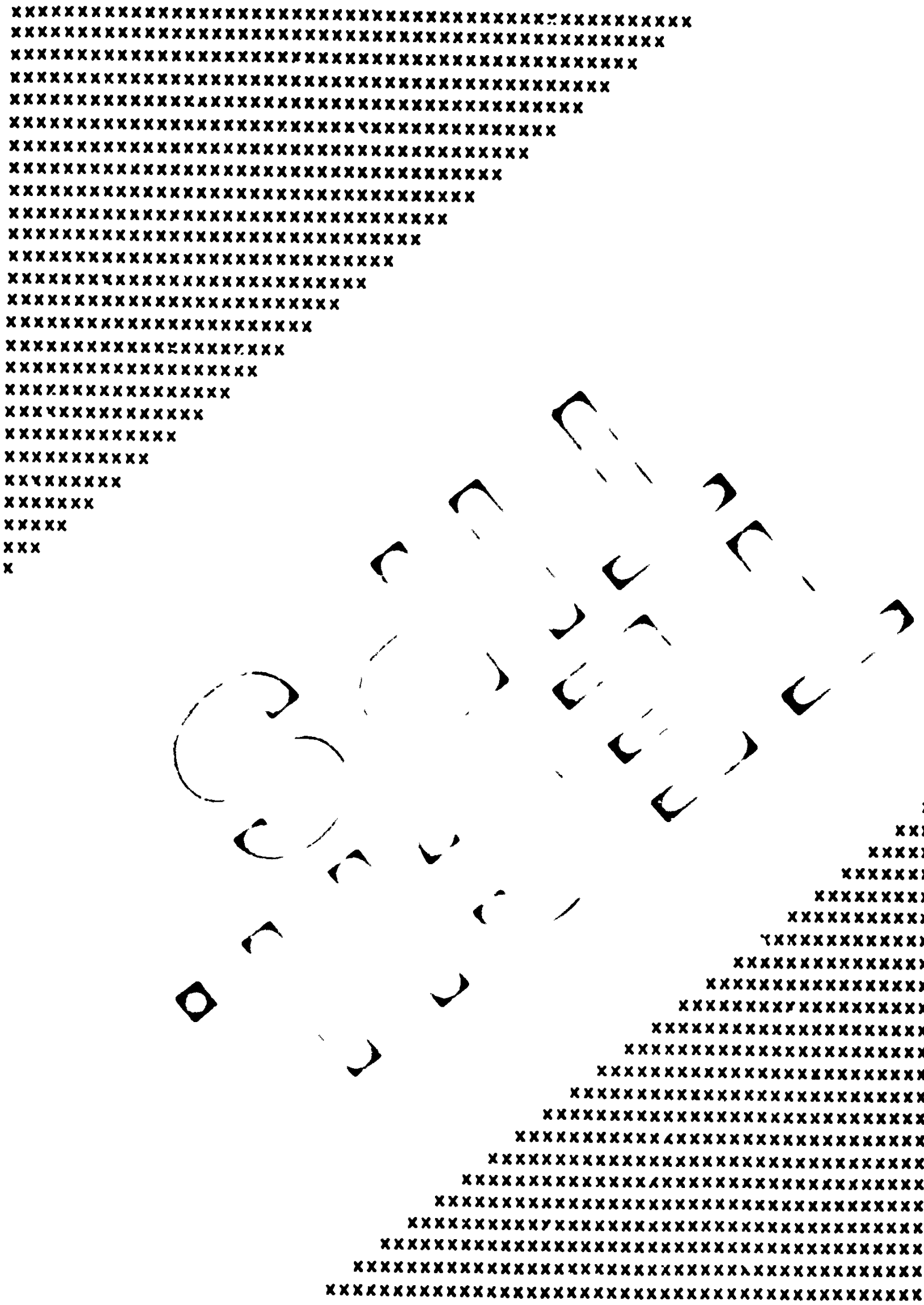
For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2.

EN 01585 12 REV C(548)

PC350-TT-25


PCS380



13-Oct-1987
PC380-INDEX.B
REV B

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC380--TT-01	A	2-Jan-85	364	P/OS format error override capable
-PC380--TT-02	A	3-Feb-86	416	Non DEC authorized add-on
-PC380--TT-03	A	1-Apr-86	424	PRO/DECNA maint diskette part no
-PC380--TT-04	A	30-Sep-86	451	Servicing units/locking key switch
-PC380--TT-05	A	12-Mar-87	473	VR241 cable holder
-PC380--TT-06	A	13-Oct-87	502	RT11 disk corrupt prof maint serv

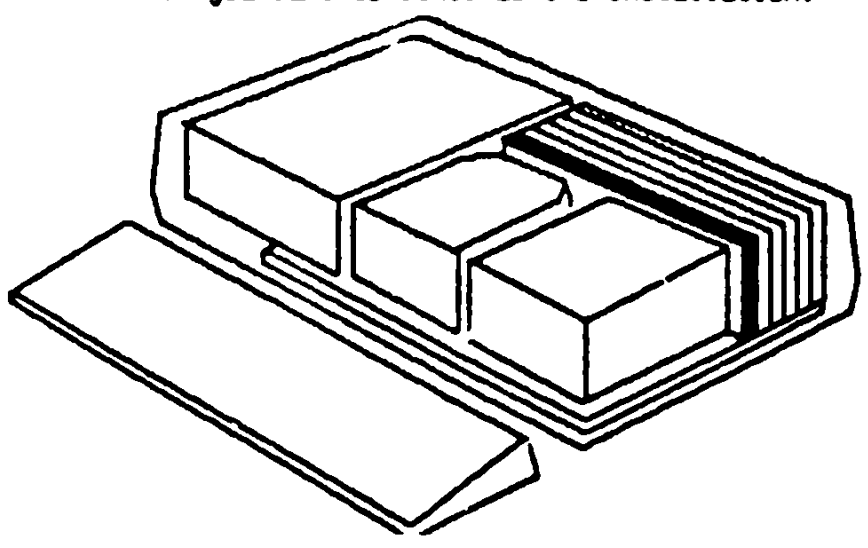
digital	FIELD SERVICE TECH TIP					Option Designator PC380
	☐ 12 Bit	☒ 16 Bit	☐ 18 Bit	☐ 32 Bit	☐ 36 Bit	Category COMPUTING TEPMINALS
Title P/OS FORMAT ERROR OVERRIDE CAPABILITY						Tech Tip No. PC380-TT-01
Processor Applicability P | C | 3 | 8 | 0 | | |		Cross Reference N/A				Tech Tip Rev A / Page 1 of 2
Author JOHN LEEDS			Mgr./Supv. Approval			
Location MAYNARD MILL		Mail Stop ML05-2/T94				Date
CSSE Approval						Date 19-DEC-84
FSPSG APPROVAL						Date

With the current version of P/OS, V2.0 or V2.0A, a potential formatting problem exists on the PC380 using the RD50, RD51 or the RD52 hard disks. When formatting the hard disk, certain soft error codes can cause the system to hang, displaying a picture of the system with the RD controller highlited.

SEE PICTURE BELOW

The installation process will try to correct the following hardware problem during preparation of the hard disk drive:
Hard disk (Winchester) drive (module code: 000401 status code: 000413)

Press DO if you want to continue the installation.



010013

000401

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P/OS V2.0A will attempt to recover from the Error Codes 010013/000401 or 010030/000401 on the PC380. A message will be displayed as follows:

> THE INSTALLATION PROCESS WILL TRY TO CORRECT THE FOLLOWING HARDWARE PROBLEM DURING PREPARATION OF THE HARD DISK DRIVE: HARD DISK (WINCHESTER) DRIVE (MODULE CODE: 000401 STATUS CODE: 000413, OR 000013) PRESS DO IF YOU WANT TO CONTINUE WITH THE INSTALLATION.

Note: It will take at least 55 seconds before this message is displayed.

PROBLEM:

There are 3 additional formatting error codes that are not presently recoverable with V2.0A of P/OS Hard Disk Operating System. They are as follows:

010025/000401 010031/000401 010032/000401

If these three error codes are encountered, the hard disk is now corrupted. You may recover from all 5 error codes (13/401, 25/401, 30/401, 31/401, 32/401) by a diskette labeled "P/OS Hard Disk V2.0B System." (This diskette is being distributed to all branches and Customer Support Centers.) When the error codes (25/401, 31/401, 32/401) are encountered, replace the current diskette labeled "P/OS V2.0A System" with "P/OS V2.0B System." Then restart the installation process again. The only other alternative is to replace the hard disk.

Note: These error codes do not necessarily indicate soft errors, but may indicate an unrecoverable hardware error in the hard disk sub-assembly. In the case of an unrecoverable hardware error, refer to the PC380 Pocket Service Guide EK-PC380-PS-001.

Note: All 5 error codes (13/401, 25/401, 30/401, 31/401, 32/401) will be recoverable in the next release of P/OS Hard Disk Operating System.

DEFINITION OF ERROR CODES:

13/401	ERROR BIT SET ON OPERATION END
25/401	DATA MARK NOT FOUND
30/401	ID NOT FOUND
31/401	CRC ERROR, ID FIELD
32/401	CRC ERROR, DATA FIELD

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Field Service **TECH TIP**

digital™

	Non DEC Authorized Add-on	Category Terminals	Rev A
Title	PC300-TT-33 PC325-TT-02	Option PC380	
Cross Reference	PC350-TT-11 ~~PC380-TT-02~~	TECH TIP No PC380-TT-02	

Problem/Solution

NON-DEC AUTHORIZED ADD-ON KEYSWITCH

It has beer discovered through investigation that a security key switch that is advertised for use on DEC's personal computers does not meet the primary power disconnect device requirements of that application. Additionally, there may be certain safety risks involved in installation, use and service where this switch is involved.

The key switch is manufactured by:

PC Security Enterprises
Newton Centre, Ma.

The product trade name is: Power Lock 1000

CAUTION

This product is not a DEC authorized add-on part and is not to be installed by DEC field personnel. There are no exceptions to this. The following is the position of the corporatioin and customers should be discouraged from using this product if inquiries are made.

"The product is not a Digital authorized add-on part. The product does not meet Digital's power requirements for a primary power disconnect device. Use of this product in Digital's personal computers may result in failure of the PC and/or the switch."

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
John H. Leeds Jr.	Bruce J. Conley	John H. Leeds Jr.
Author s Manager Ronald Bogue		Field Service Product Safety
Release Date 03 February 1986		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC380-TT-4

Title Non DEC Authorized Add-on

Category Terminals
Option PC380
TECH TIP No PC380-TT-02 Rev A

The fan replacement in an H7862 power supply which contains a Power Lock 1000 keyswitch will not be done. The complete H7862 power supply FRU must be replaced.

For removal and replacement of the H7862 power supply in any of the PC300 family of products refer to the following Pocket Service Guides;

PROFESSIONAL 380	EK-PC380-PS
PROFESSIONAL 325/350	EK-PC350-PS
PROFESSIONAL PC350 IVIS	EK-3IVIS-PS

NOTE:

An H7862 power supply with the Power Lock 1003 keyswitch installed becomes the property of the Customer. The Customer will pay full cost for the replacement H7862 power supply when such Power Lock has been installed. DEC Service Contracts and Warrenties do not cover damage caused by the installation, operation, or malfunction of the switch.

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PC380-TT-5

Field Service TECH TIP

digital™

Title: PRO/DECNA Maint. Diskette P/N Corrections

Category: Computers Rev: A

Option: PC380

Cross Reference: DECNA-TT-02, PC350-TT-12

TECH TIP No: PC380-TT-03

Problem/Solution

Both the PC350 and 380 Pocket Service Guides list an incorrect part number.

For the PRO/DECNA maintenance diskette, the correct P/N is ZBA03-C3.

In Document Number:

EK-PC350-PS-003 Page 73
Change QBA-03-LJ to ZBA03-C3

EK-PC380-PS-002 Page 91
Change QBA-03-L3 to ZBA03-C3

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Robert Larsen	Bruce J. Conley	Ron Caprio
Author's Manager: Ron Francoeur		Field Service Product Safety
Release Date: 1 April 1986		Revision: A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC380-TT-6

Field Service **TECH TIP**

digital™

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC380

Cross Reference: (See page 3)

TECH TIP No.: PC380-TT-04

Problem/Solution

```
**********************************************
*                  CAUTION                   *
*                                            *
*  USE CORDSET FOR DISCONNECT DEVICE         *
*                                            *
**********************************************
```

Some customers have purchased the Key Switch manufactured by Pc Security Enterprises for use on the above mentioned products.

When servicing the products which have a Locking Key Switch ,do not rely on the Key Switch as a disconnect device. Use the cordset for a disconnect device to remove AC power before performing any service on these options.

The part # for the Key Switch is D84 and the FRU affected (pwr supply) is the H7862.

You are obligated to notify affected customers of Digital's concern for safe access and of Digital's Service Policy regarding FRU's which contain this switch. Attached is an addendum which can be re-typed on Digital letterhead and presented to the appropriate representative of affected customers. Such notice should precede new service contracts. For existing contracts, the appropriate customer representative must be notified either by mail or at the next service call.

See also Tech-Tip# PC300-TT-33.

Approvals

Author	ESD&P TECH TIP Coordinator	C[illegible] E
Tom Wrenn	Bruce J. Conley	John Leeds
Author s Manager		Field Service Product Safety
S. Hoyt		
Release Date		Revision
31 September 1986		A

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For more in'ormation on wr ting or approving TECH TIPs see Adm nistrat ve TECH TIP Number 2

PC 380 TT-7

Title: Servicing Units with Locking Key Switch

Category: Terminals Rev: A

Option: PC380

TECH TIP No: PC380-TT-04

THE FOLLOWING IS AN ADDENDUM:

SUBJECT: PowerLock 1000-RB

"Dear Customer:

You have either purchased, installed or made an inquiry to Digital regarding the PowerLock 1000-RB key switch manufactured by P.C. Security Enterprises of Newton, Ma.

The following is Digital's service policy with respect to this key switch.

Background

The PowerLock 1000-RB key switch is not a Digital approved add-on part for Rainbow, DECmate II or Professional model personal computers. This key switch does not meet Digital's power requirements for primary power disconnect devices. The use of this switch in the above personal computer products is a primary power disconnect application.

Use of this key switch in Digital's personal computers may result in failure of the key switch and/or the personal computer. Digital also believes that a risk of personal injury to operator or service personnel may exist in the event of such a failure or during access to service other parts within the unit.

For your continued protection, it is Digital's recommendation that access to any part contained within the unit's enclosure be preceded by removal of the power cord from the AC Power source (typically a wall outlet).

Digital Service Policy

Digital Field Service will not install this key switch product.

Digital Service Contracts and warranties do not cover, with either labor or materials, damage caused by the installation, operation, maintenance or malfunction of this key switch.

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Title Servicing Units with Locking Key Switch

Category Terminals Rev A

Option PC380

TECH TIP No. PC380-TT-04

Field replaceable units (FRU's) which have been modified by installation of this key switch are not eligible for exchange under Digital's Service Contracts or warranties. Modified FRU's which fail while under a Digital Service Contract or warranty will be removed by Field Service and left with the customer. They become the property of the customer. A replacement FRU must be purchased by the customer at standard prices. Digital will install the replacement FRU, but will not install the key switch.

If you have questions regarding Digital's service policy, please contact _____.

Very truly yours,

Cross References:

PC300-TT-34
PC325-TT-03
PC350-TT-14
IVIS-TT-02

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PC380TT 9

Field Service TECH TIP

digital™

Category Computers Rev A

Title VR241 Cable Holder

Option PC380

Cross Reference (See below)

TECH TIP No PC380-TT-05

Problem/Solution

The RGB video cable does not stay securely fastened to the back of the monitor resulting in premature cable failure.

Velcro does not hold and cable hangs from BNC connectors. Cable failure is apparent by loss of one or more colors or by a tinted white color if the monitor is being used in monochrome mode.

Solution:

A plastic cable holder has been designed that will attach to the back of the cabinet and securely hold the color cable.

The part number of the cable holder kit is 70-23351-01 and is available from SR17. The kit contains an installation sheet the cable holder and a plastic insert that fits into the housing of the video cable. The insert contains the Digital Logo and was included with the kit for aesthetic purposes.

The cable holder is now being packaged with the RGB video cable that is used with the VR241. However, many monitors already in the Field do not have the cable holder. CSSE recommends that the Field install the cable holders on monitors (VR241's) that do not have the holder installed.

Cross References:

PC100-TT-12
VT241-TT-16
PC278-TT-08
PC325-TT-04
PC350-TT-15

Approvals		
Author Paul Petherick	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Ron Francoeur
Author's Manager Ron Francoeur		Field Service Product Safety
Release Date 12 March 1987		Revision A

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

PC 380 TT-14

digital™

Title RT11 Disk Corruption
Professional Maintenance Services

Cross Reference PC350-TT-16

Category Systems

Rev A

Option PC380

TECH TIP No PC380-TT-06

Problem/Solution

Running MAINTENANCE SERVICES on the following configuration *MAY* produce a problem with the directory structure of the hard disk.

Configuration----------

Machine	: PROFESSIONAL 350 or PROFESSIONAL 380
Operating System:	RT-11
Software producing the problem:	Standalone (Bootable) Maintenance Services for the Professional Hardware.

Version 2 and 3 of the Maintainance Services for the Professional have the capability of running from diskette (i.e., Bootable media).

For P/OS, this presents no problem; for RT-11, there is a possible problem.

o Running the Maintenance Services allows 4 possible attempts to check the validity of either the hard disk or the hard disk subsystem.

The four possibilities are:

Customer mode:	Service mode:
Big Disk Block check	Big Disk Block check
System Unit tests	System Unit tests
- Hard disk subsystem	- Hard disk subsystem

Approvals

Author Joseph Ciuffini	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE John Leeds
Author s Manager		Field Service Product Safety
Release Date 13 October 1997		Revision A

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PC380-TT-11

Title RT11 Disk Corruption
Professional Maintenance
Services

Category Systems Rev A
Option PC380
TECH TIP No. PC380-TT-06

o The Hard Disk tests checks are handled as follows:

P/OS	non - P/OS
(a) Big Disk block check The file structure is tested for known bad blocks; new bad blocks are reported.	(a) Big Disk block check Maintenance Services does not find a P/OS structure on the disk and reports that fact. No further testing is done.
(b) System Unit test(s) Track 0 is used to write and then read sample data. If data read = data written, the subsystem passes.	(b) System Unit test(s) Track 0 (block 15) is used to write and read sample data. If data read = data written, the subsystem passes. ********** THIS IS THE PROBLEM CASE. ********** RT-11 uses a number of contiguous blocks as directory segments. If there are enough files on the hard disk that force using Block 15 as part of the directory structure, then running the System Unit test on the hard disk subsystem will corrupt the directory pointers.

RESOLUTION/RECOMMENDATION:

Under no case should a RT-11 hard disk be tested witn the System Unit Test for hard disk subsystem.

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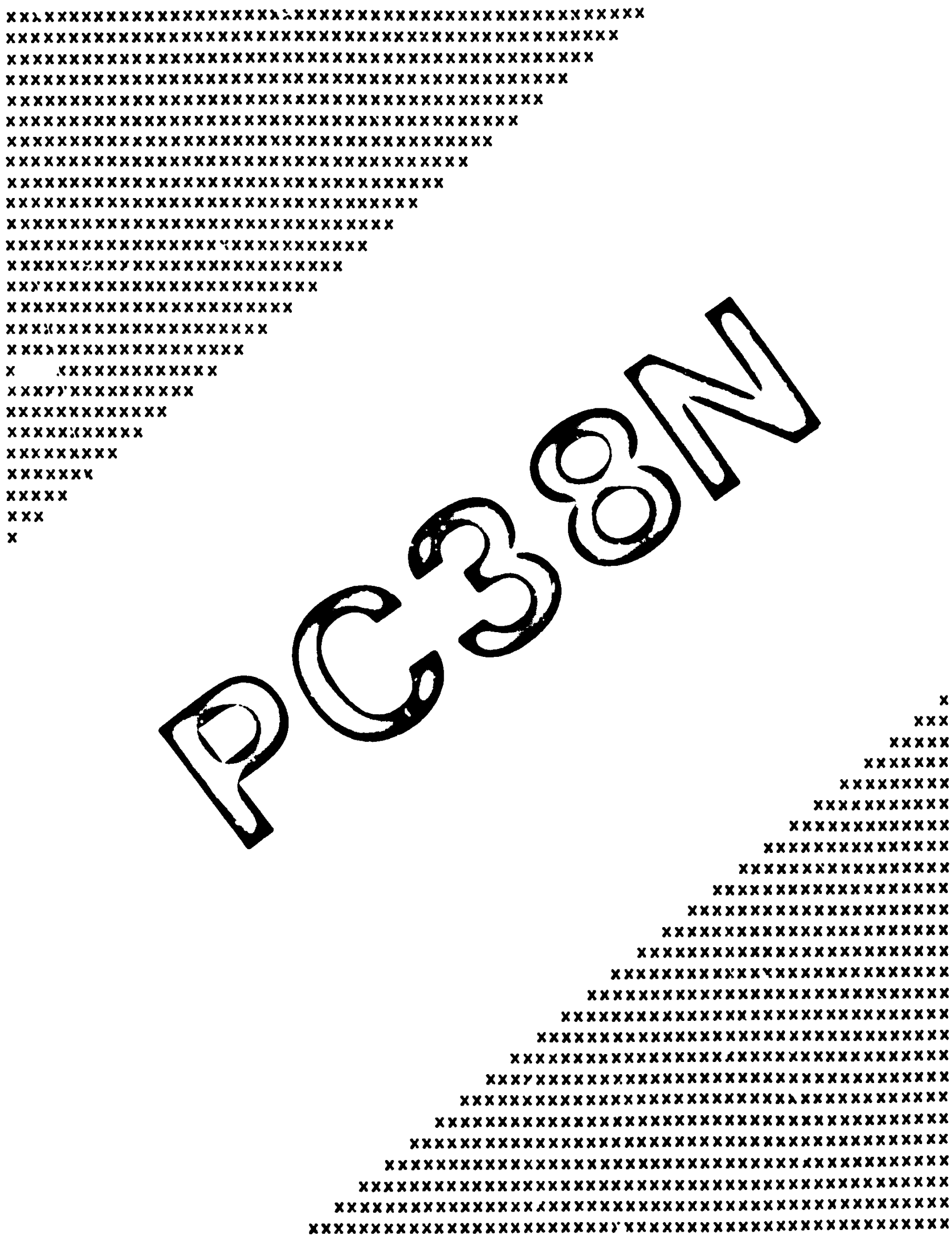
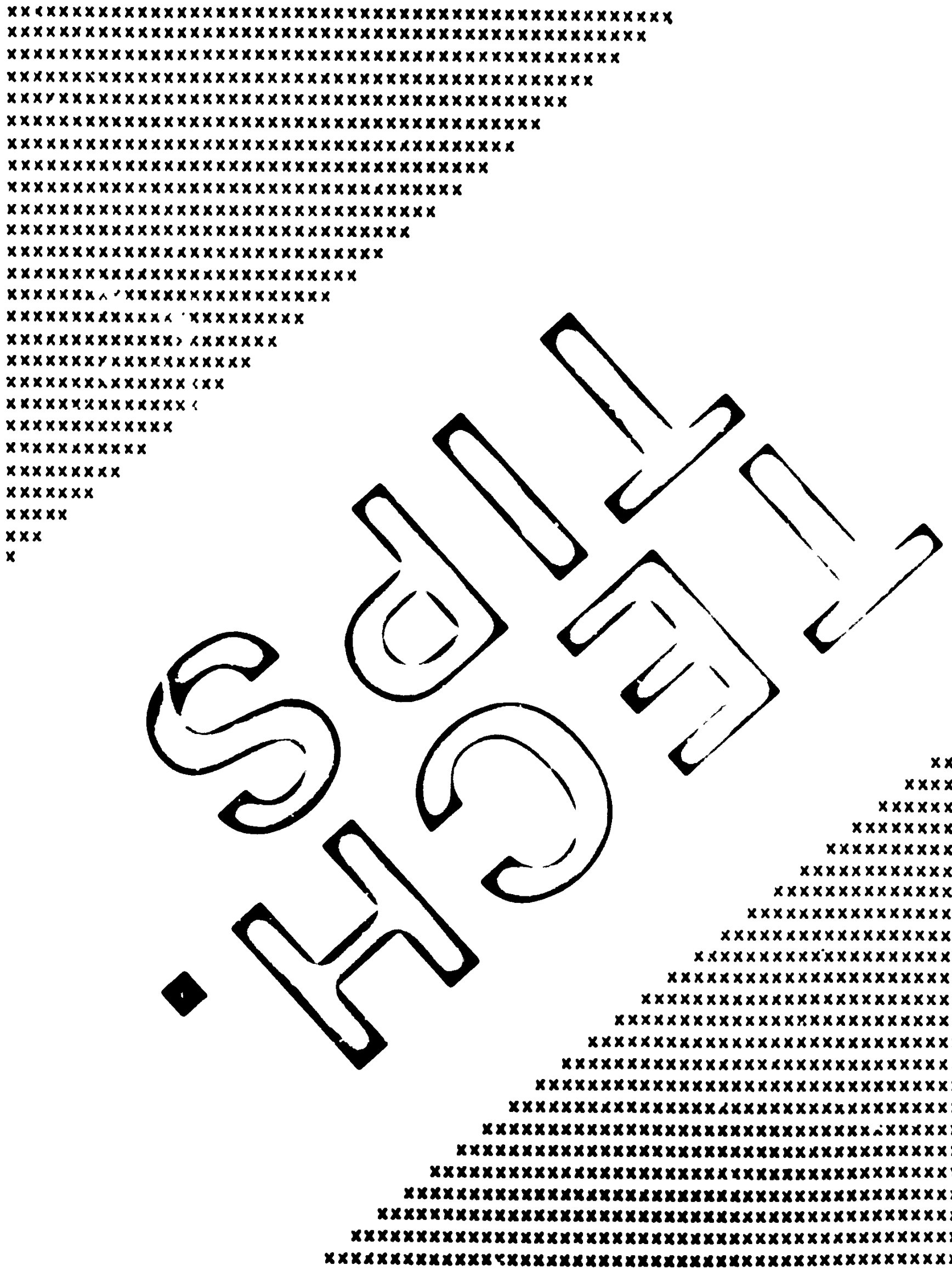
PC380-TT-12



PC-38N


SOFTECH

8-Dec-1987
PC38N-INDEX.D
REV D

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC38N--TT-01	A	27-Apr-87	478	Nautilus CSA3:/VMS connect/mount
-PC38N--TT-02	A	1-Sep-87	496	Remote port baud rate changes
-PC38N--TT-03	A	17-Nov-87	507	Signal meaning, SHOW POWER
-PC38N--TT-04	A	8-Dec-87	509	Console update - release 29

Field Service TECH TIP

digital™

Title: Nautilus CSA3: (Winchester) VMS Connect/Mount "Time Bomb"

Category: Systems | Rev: A

Option: PC38N

Cross Reference: (See page 2)

TECH TIP No: PC38N-TT-01

Problem/Solution

Whenever you connect the Console disk with a SYSGEN command "CONNECT CONSOLE", all three disk drives are CONNECTed: the two floppy drives (CSA1: & CSA2:) and the Winchester (CSA3:). There is a bug in the CWDRIVER and OPDRV8NN (part of SYSLOA8NN.EXE) VMS console software drivers which will cause the system to crash about 18 hours after any console disk drive operation/access with a "Reserved Operand Fault". There is no clear indication in the VMS Errorlog or CONSOLE BUGCHECK message that the cause of the crash was this CSA3: "Time Bomb" bug; and the crash-dump pattern is ambiguous.

STATUS:

VMS had patched this "time-out/time-bomb" problem in VMS 4.5, but then discovered after the VMS-4.5 SDC Release another problem when MOUNTing CSA3: on a busy system: which also causes a crash with a similar crash-dump "foot-print" pattern. VMS is planning a fix for this 2nd problem in VMS-4.6; and is investigating the feasability of a patch for VMS-4.5 SYSLOA8NN.EXE.

SUGGESTED ACTION:

At the present time, the recommended work-around from Engineering for this problem is not to CONNECT (under SYSGEN) or access the console disks with VMS-4.4 or VMS-4.5. Traditionally, many customers use "SYSGEN> CONNECT CONSOLE" command in the site-specific SYSTARTUP.COM, a common practice with earlier VAXes: THIS COMMAND SHOULD BE AVOIDED AND DISABLED (by commenting out with "!") UNTIL THIS PROBLEM IS FIXED IN VMS-4.6 OR WITH A PATCH.

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Jerry Harrigan	Bruce J. Conley	Jerry Harrigan
Author's Manager: George White		Field Service Product Safety
Release Date: 27 April 1987		Revision: A

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PC38N-TT-3

Title Nautilus CSA3: (Winchester) VMS Connect/Mount "Time Bomb"

Category Systems Rev A
Option PC38N
TECH TIP No PC38N-TT-01

If VMS console disk access is absolutely required by the customer, there are 2 available alternatives under VMS-4.4, but the latter VMS-4.5 CSA3: "MOUNT" problem cannot be avoided.

- REBOOT VMS-4.4 after console disk access, prior to 18 hour timeout.
- CREATE/SUBMIT A PERIODIC (UNDER 18-HOUR) BATCH JOB, to perform "MOUNT CSA3:" and then "DISMOUNT CSA3" VMS DCL commands, thus preventing device-timeout expiration.

VAX CSSE will provide further status and any available patch status here and via Blitz within 1-2 months.

Cross References:

851BA-TT-01
855BA-TT-01
8800-TT-03

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Field Service **TECH TIP**

digital™

Title: Remote Port Baud Rate Changes

Category: Systems Rev: A

Option: PC38N

Cross Reference: N/A

TECH TIP No: PC38N-TT-02

Problem/Solution

Your REMOTE Port Baud rate is wrong?

If you've noticed that the REMOTE port on your Nautilus Console keeps changing baud rate each time you power-up the console, you might want to examine the settings for the Printer Queue(s).

If there is a Printer Queue established using the "Communications Port", then that's the culprit. (The "Communications Port" is the same as the "REMOTE port"!) Each time P/OS (The Pro Operating System software) boots up, the printer programs initialize your Communications Port to the baud rate specified for that printer queue. This appears to over-ride the setup established by the Pro/Communications menus.

Please read Printer Queue Change Procedure (below)

****

Printer Queue Change Procedure

Here's the procedure to examine or change the Printer Queues on the Nautilus Console. In brief, we recommend that you only establish one printer queue, and that that queue be targeted to the Printer Port, *NCT* the Communications Port.

Approvals		
Author: Jerry Harrigan	ESD&P TECH TIP Coordinator: Bruce J. Conley	CSSE: Jerry Harrigan
Author's Manager: George White		Field Service Product Safety
Release Date: 1 September 1987		Revision: A

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For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2

Title Remote Port Baud Rate Changes

Category Systems Rev A
Option PC38N
TECH TIP No PC38N-TT-02

Examining the Printer Queue(s)

1. Get to the P/OS Main Menu.

2. Select the 'Print control services' item. Do this by pressing the dow·-arrow key until the arrow cursor is to the left of "Print control services". Then press either <Return>, <Enter>, or <Do>. The 'Print Control Services Menu' will be displayed.

3. Select the 'Modify printer characteristics' item. Do this by pressing the down-arrow key five times until the arrow cursor is to the left of "Print control services". Then press either <Return>, <Enter>, or <Do>. The 'Modify Printer Characteristics' menu will be displayed, and the cursor will be blinking at the 'Printer type:' field.

4. At the top of the display, the 'Print Queue:' item will be display the name of the printer queue that you are examining or modifying. If you have more than one queue, the display will be that of your default queue. Usually, the name displayed is one of the two shown below, although it is partially user-selectable.

   - PRO$$PROVOLUME$PRINT
   - PRO$$PROVOLUME$LA50Q

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5. Near the top of the di lay, the 'Printer device:' item will display the name o. the port that is in use. One of the following will be shown:

- Printer port	- Communications Port
- Mini-exchange(Port 1)	- SLU(TT3)
- Mini-exchange(Port 2)	- SLU(TT4)
- Mini-exchange(Port 3)	- SLU(TT5)
- Mini-exchange(Port 4)	- SLU(TT6)
- Mini-exchange(Port 5)	- SLU(TT7)
- Mini-exchange(Port 6)	- SLU(TT8)
- Mini-exchange(Port 7)	- SLU(TT9)
- Mini-exchange(Port 8)	- SLU(TT10)

If anything other than 'Printer port' is displayed, this printer queue must be deleted and a new printer queue created (assuming you have a standard, supportable Nautilus Family Console). The procedure to do this is described below, but first we will verify that there is only one printer queue on your system, and then we will exit from the 'Modify Printer Characteristics' menu.

6. Press the <Additional Options> key (that's <F14>). The 'Select a Print Queue Menu' will be displayed, showing the names of all of the existing print queues. If you have just one queue, proceed to step 7. Otherwise, use the down-arrow key to select the next queue, press <Return>, <Enter>, or <DO>, and go back to step 4.

7. Press the <Exit> key. The 'Modify Printer Characteri·tics' menu will be displayed.

8. Press the <Exit> key. The 'Print Control Services Menu' will be displayed.

9. If you are going to delete the existing queue(s) and create a new queue, please skip to step 3 in the procedure below. If you are satisfied with the existing queue, press <Exit> again. The P/OS Main Menu will be displayed.

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For more information on writing or approving TECH TIPs see Administrative TECH TIP Number 2

Title Remote Port Baud Rate Changes

Category Systems Rev A
Option PC38N
TECH TIP No PC38N-TT-02

Deleting Printer Queue(s)

1. Get to the P/OS Main Menu.

2. Select the 'Print control services' item. Do this by pressing the down-arrow key until the arrow cursor is to the left of "Print control services". Then press either <Return>, <Enter>, or <Do>. The 'Print Control Services Menu' will be displayed.

3. Select the 'Delete print queue' item. Do this by pressing the down-arrow key seven times until the arrow cursor is to the left of "Delete print queue". Then press either <Return>, <Enter>, or <Do>. The 'Select a Print Queue Menu' will be displayed.

4. Using the down-arrow key, place the cursor arrow to the left of the queue to be deleted. Press either <Return>, <Enter>, or <DO>. The printer queue will be deleted and the 'Print Control Services Menu' will be displayed again.

5. If there are more queues that you wish to delete, go back to step 3.

6. If you have deleted all of the existing queues and need to create a new queue, please skip to step 3 in the procedure below. If you have left one satisfactory queue in existence, press <Exit>. The P/OS Main Menu will be displayed.

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For more information on writing or approving TECH TIPs, see Administrative TECH TIP Number 2

Creating a New Printer Queue

1. Get to the P/OS Main Menu.

2. Select the 'Print control services' item. Do this by pressing the down-arrow key until the arrow cursor is to the left of "Print control services". Then press either <Return>, <Enter>, or <Do>. The 'Print Control Services Menu' will be displayed.

3. Select the 'Add print queue' item. Do this by pressing the down-arrow key six times until the arrow cursor is to the left of "Add print queue". Then press either <Return>, <Enter>, or <Do>. The 'Add a Print Queue' menu will be displayed, and the cursor will be blinking at the 'Print Queue name:' item.

4. If you are satisfied with the proposed name of the new print queue, press <Return>, <Enter>, or the Down-Arrow. *DO NOT PRESS <DO> AT THIS TIME* !

   If you are not satisfied with the proposed name of the new print queue, press the <Select> key. The first part of the name will be displayed at the bottom of the screen. For example, 'PRO$$PROVOLUME$' will likely be displayed. *YOU CAN ADD MORE TEXT TO THIS NAME, BUT YOU CAN'T DELETE OR CHANGE THIS INITIAL PORTION*. When you are satisfied with the name for your new queue, press either <Return>, <Enter>, or <DO>. The 'Print Queue name:' item on the menu should now display your newly-chosen name. Go back to the beginning of this step (step 4) again.

5. The cursor should now be blinking at the 'Device:' item. Press <Select>. A series of choices will be displayed across the bottom of the screen, with 'Communications port' highlighted.

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6. Press the left-arrow key. 'Printer port' will appear on the screen at the left and be highlighted, and the other choices will scroll rightwards. Press either <Select>, <Return>, <Enter>, or <DO>. The 'Device:' item on the menu should now display 'Printer port'.

7. Check once again the 'Print Queue Name:' and 'Device:' items. If something needs to be changed, return to step 4. If you are satisfied with both items, press the <DO> key. The 'Modify Printer Characteristics' menu will be displayed, and the cursor will be blinking at the 'Printer type:' item.

8. All of the default settings are usually correct. However, if your printer requires some special setting (such as printer type or baud rate), make the change now. Changes are made in the same fashion as in step 6 above. You place the cursor at the field to be changed, press <Select>, the menu of choices is displayed at the bottom of the screen, you use the arrow keys to select your choice, and confirm that selection with either <Select>, <Return>, <Enter>, or <DO>. Remember that some of the menu's choices may be scrolled off from the right or left sides of the menu.

   NOTES

   - Both LA50 and LA75 printers use the 'LA50' printer type.
   - Most Digital-supplied printers ship from the factory set to 4800 Baud.

9. When you are satisfied with the printer characteristics, press the <DO> key. The Queue will be created, and the 'Print Control Services Menu' will be displayed. Now, you must select this queue as your default queue. Skip to step 3 in the procedure below.

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Title Remote Port Baud Rate Changes

Category Systems Rev A
Option PC38N
TECH TIP No PC38N-TT-02

Selecting a Default Printer Queue

1. Get to the P/OS Main Menu.

2. Select the 'Print control services' item. Do this by pressing the down-arrow key until the arrow cursor is to the left of "Print control services". Then press either <Return>, <Enter>, or <Do>. The 'Print Control Services Menu' will be displayed.

3. Select the 'Set default print queue' item. Do this by pressing the down-arrow key four times until the arrow cursor is to the left of "Set default print queue". Then press either <Return>, <Enter>, or <Do>. The 'Select a Print Queue Menu' will be displayed.

4. If you've followed instructions so far, only one queue will be shown. If more than one queue is shown, go back, examine the various queues, and delete all but one, or delete all and create one new queue.

5. Using the down-arrow key, place the cursor arrow to the left of the queue that you wish P/OS to use as your default queue. Press either <Return>, <Enter>, or <DO>. The default is set and the 'Print Control Services Menu' will be displayed.

6. Press <Exit>. The P/OS Main Menu will be displayed.

(This Tech Tip shall apply to all 851BA, 855BA, and 857BA's.)

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EN 01585 12 REV G548

Title: Signal Meaning, SHOW POWER
Cross Reference: 851BA-TT-04, 855BA-TT-04, 8800-TT-05

Category: Systems
Option: PC38N
TECH TIP No: PC38N-TT-03

Rev: A

Problem/Solution

From the pen of Atlant Schmidt, SASE Nautilus Console Engineer:

I just got a question regarding the signals displayed at the bottom of a >>>SHOW POWER display. I don't know where they are documented, so here's a hint as to what they mean.

They all relate to signals and states within the EMM (the Environmental Monitoring Module in the Modular Power Supply). The EMM spec suggests the following interpretations. "??" means I'm not really sure about a particular signal.

MODULE:	B	C	D	E	F	H	J	L	LAC	KEY		
STATUS:	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok		
SIGNAL:	PERR	PENA	DCLO	ACLO	AFF2	CBF	BBF	AFF1	55D	ASD	DME	ASW
VALUE:	lo	hi	lo	lo	lo	lo	hi	lo	lo	lo	hi	lo

?? KAC -- "bad" = Module K is asserting ACLO Signal
(Does this ever appear in a Nautilus? I think I've seen it but it wasn't there today!)

LAC -- "bad" = Module L is asserting ACLO Signal

KEY -- "bad" = Module-placement Serial Key Over-ride asserted
(This is unused in the Nautilus Family, but goes "bad" if you press the little white button on the EMM. You always wanted to press that button, didn't you :-)?)

Approvals

Author	ESD&P TECH TIP Coordinator	CSSE
Jerry Harrigan	Bruce J. Conley	Jerry Harrigan
Author's Manager George White		**Field Service Product Safety**
Release Date 17 November 1987		**Revision** A

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Title Signal Meaning, SHOW POWER

Category Systems Rev A
Option PC38N
TECH TIP No. PC38N-TT-03

PERR -- "hi" = EMM RA Parity Error occurred

PENA -- "hi" = Parity Checking Enabled

DCLO -- "hi" = DCLO signal asserted

ACLO -- "hi" = ACLO signal asserted

AFF2 -- "hi" = Air Flow fault at sensor 2

CBF -- "hi" = Crowbar Fault occurred

?? BBF -- "hi" = Battery Backup Fault occurred

AFF1 -- "hi" = Air Flow fault at sensor 1

55D -- "hi" = RST5.5 interrupts to the EMM's 8085 5P disabled
(This disables the 8085 from being interrupted by Module-OK "ok" to "bad" transitions.)

ASD -- "hi" = Automatic Shutdown in Progress

DME -- "hi" = Default Mode Enabled
(allowing unsolicited EMM messages)

?? PSW -- "??" = Programmable switch closed
(This signal seems to be unused in Nautilus Family although the signal is brought out to a via on the MPS backplane. It originates at J50, pin C18.)

Added Comment: Atlant

As it took me two weeks of flaky problem trouble shooting if think I can add a comment to the meaning of the "CBF" signal in SHOW POWER. I'll rather call it CrowBar Forced (instead of Fault) as it really mean that the -2.5 volts MPS had its crowbar circuit triggered by the -5.2 volts Module Not OK assertion. (It's not so clear in the schematics because of some strange signal naming convention..., but believe me that's the real meaning of the signal).

Unfortunately that CBF is not latched and if the reason for its assertion is just a transient on the -5.2v MOD OK signal, you can change a lot of -2.5V MPS..... :-)

Rene.

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Field Service **TECH TIP**

digital™

Console Update - Release 29

Title: 851BA-TT-05, 855BA-TT-05

Cross Reference: 8800-TT-06

Category: Systems

Option: PC38N

TECH TIP No: PC38N-TT-04

Rev A

Problem/Solution

There have been some confusion with the procedures to update the Console Tasks. In the VAX 8530/8550/8700/8800 Console Releases Notes, Version 6.0, there are two procedures you can follow to update the console. The first, procedure starting on Page 48 of 71, "The Upgrade Procedure", was written for the engineer that has some knowledge of P/OS and its installation procedures. It assumes that the PRODCL application was the three application installed, so it uses the LB0:[ZZAP00003.x] directories. But, if the application was installed differently these directories would be different. If this is the case with your console, this procedure will not work.

The second procedure, "VAX 8530/8550/8700/8800 Console Installation", starting on Page 59 of 71, uses the P/OS to remove the old application and install the new application. We recommend that this procedure should be used to upgrade your console.

Approvals		
Author: Jerry Harrigan	ESD&P TECH TIP Coordinator: Bruce J. Conley	CSSE: Jerry Harrigan
Author's Manager: George White		Field Service Product Safety
Release Date: 8 December 1987		Revision: A

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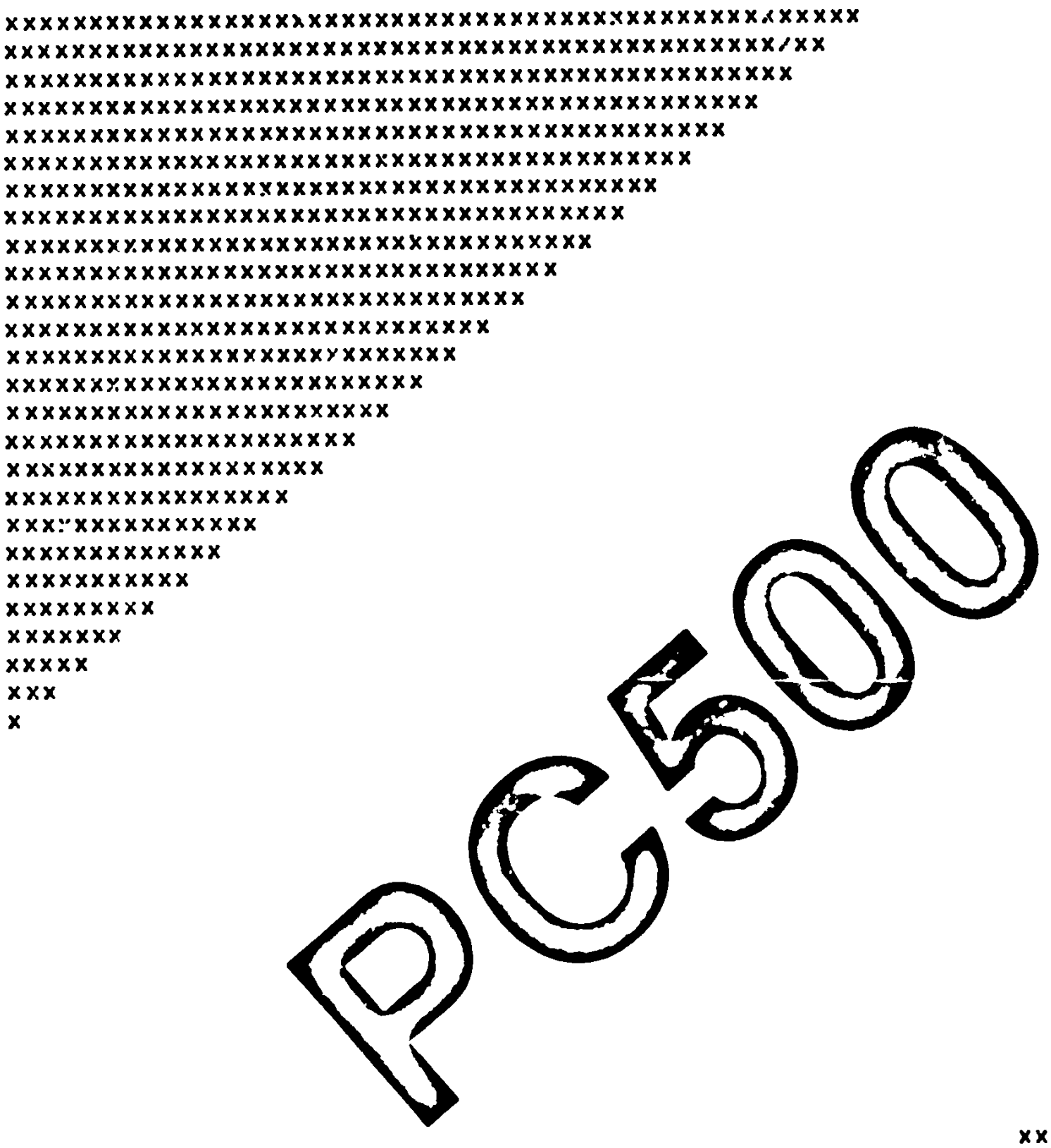
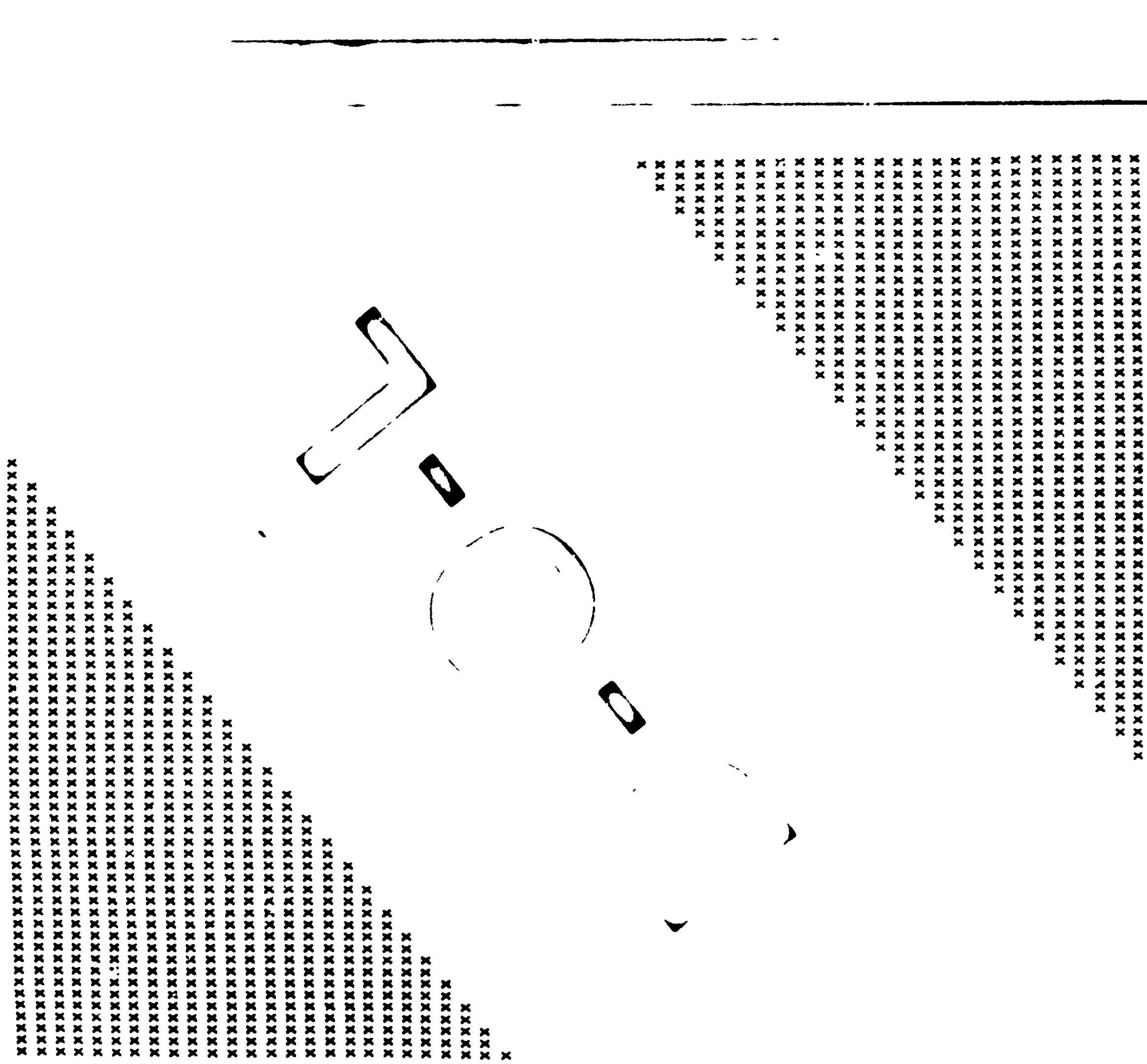
PC38N-TT-13


PC500



FCO FIELD CHANGE ORDER LOG

digital

PC500

DEC-O-LOG

VAXMATE

LIBRARY TYPE

VAX

PC500-I001 CODE: F

DEC 87 - PROBLEM Applications that run in Protected Mode do not operate properly IBM-PC/AT-compatible Extended Graphics Adapter options (EGA Cards) do not operate properly Systems may not handle heavy network traffic situations well

FIELD EFFECTIVITY This FCO is against CPU boards (P/N 54-16847-01) and LK250 keyboards (Rev B), shipped in initial PC500 (VAXmate) systems These systems are identified by serial number applicability provided

QUICK CHECK Remove power from unit Check inside back door Rev C1 or D1 do not require this FCO

The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate

FCO KIT ORDERING

EQ-01495-01 FCO PARTS

EQ-01495-XX FCO PARTS

FA-04789-01 FCO only

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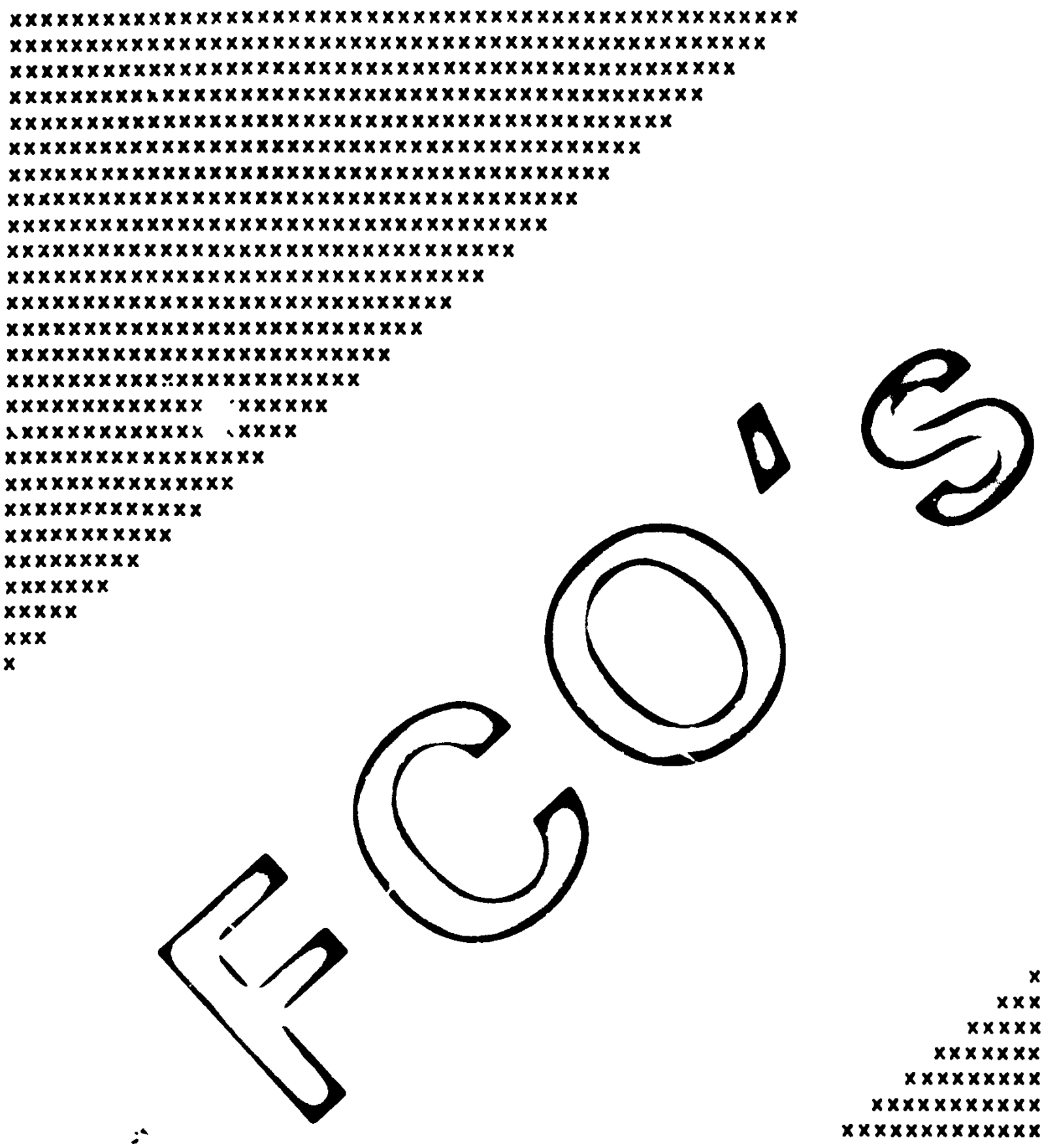
PC500 - D-0-1- 1


FCC'S

10-Nov-1987
PC500-INDEX.A
REV A

MICROMEDIA PUBLISHING

Field Change Order Index

FCO Number	FA REV	Rel. Date	SB#	Problem
-PC500---I001	A	4-Nov-87	506	Protect mode/EGA cards do not operate properly.

digital FCO I Page 1 of 15

Field Change Order

Number PC500-I001

Applicability This FCO is against CPU boards (P/N 54-16847-01) and LK250 keyboards (Rev. B), shipped in initial PC500 (VAXmate) systems. These systems are identified by serial number applicability provided. See pages 3 and 4.

Problem Symptoms Applications that run in "Protected Mode" do not operate properly. IMB-PC/AT-compatible Extended Graphics Adapter options (EGA cards) do not operate properly. Systems may not handle heavy network traffic situations well.

Quick Check Remove power from unit. Check inside back door: Rev C1 or D1 do not require this FCO. If no labels, see page 2 to check firmware rev.

Compatibility Prerequisite FCO N/A

Estimated Time to Install 1.0 hr.

Special Tools or Test Equipment VAXmate Maintenance Kit P/N 00-26002-M7.

FCO Parts Information

Order by FCO Kit #

Contents

Quantity	Part Number	Description
EQ-01495-01 1	54-17158-01	CPU Module, VE
EQ-01495-XX 1	LK250	See page 5
FA-04789-01 1		FCO Document

EQ Kit Variation System Option Applicability SEE PAGES 3 AND 4

Approvals

CSSE Engineer Art Bonney

Responsible CSSE Manager Ron Francoeur

Microfiche Publishing Ray LeBlanc

Revision A

FCO Release Date 04 November 1987

FS Product Safety William Henry

FS Microfiche Libraries EP-FSNVX-LB VAX

FS Logistics Ed Duggan

Affected Population 10,790 World-Wide

Initial Kitting 10,790

Hardcopy Publication 11,000

Parts Availability November 1987

Quick Check: Continued from page 1.

For unlabeled systems:

At working system:

Check firmware revision levels using Extended Self Test <ctrl/alt/home> or using the Field Service Diagnostic.
If ROM date is 07/31/86 the CPU module require EQ-01495-01.
If keyboard version is 02 the keyboard requires EQ-01495-XX (where XX is determined by language, see Page 5).

Without working system, just components:

Systems with CPU modules P/N 54-16847-01 require EQ-01495-01.

Systems with keyboards not labeled Rev. C (or greater) require EQ-01495-XX (where XX is determined by language, see Page 5).

Applicability:

PC500 system serial numbers can indicate FCO applicability. There are two factors to consider, manufacturing plant and option designation.

Most VAXmates were manufactured in Taiwan and their S/N begins with TA. Units shipped to the USA and GIA are of this manufacture. Some in EUR are also. These units have different S/N applicability depending on the option variation. For example, PC500-B2 has a different breakin than PC500-C3. Use the chart on Page 3, "Taiwan Manufactured PC500 FCO Applicability" with these units.

VAXmates were also manufactured in Ayr, Scotland. Their S/N begins with AY. All these units went to EUR. These units have the same breakin S/N regardless of option variation. Use the chart on Page 4, "Ayr Manufactured PC500 FCO Applicability" with these units.

Taiwan Manufactured PC500 FCO Applicability

PC500 (VAXmate) S/N Range	CPU Module EQ Kit #	Keyboard EQ Kit #	Notes
Up to PC500-			
-B2 TA71603100			
-C2 TA71604200	EQ-01495-01	EQ-01495-XX	1,2
-B3 TA71601800			
-C3 TA71601800			
Between PC500-			
-B2			
From TA71603100			
To TA71603776			
-C2			
From TA71604200			
To TA71605110			
	EQ-01495-01	EQ-01495-XX	1,2
-B3	Probably N/A	Probably N/A	3
From TA71601800			
To TA71602389			
-C3			
From TA71601800			
To TA71602287			
After PC500-			
-B2 TA71603776			No FCO
-C2 TA71605110	N/A	N/A	
-B3 TA71602389			Req'd
-C3 TA71602287			

Note 1: If unit's CPU module has been replaced since June 1987, verification of need for FCO should be done prior to implementation, as the CPU module may have already been upgraded.

Note 2: Variant determined by keyboard language. See chart on page 5, "EQ Kit # by Keyboard Variation".

Note 3: These units most likely are at acceptable revision level and do not require the FCO. However, these systems should be checked should they exhibit failure symptoms.

Ayr Manufactured PC500 FCO Applicability

PC500 (VAXmate) S/N Range	CPU Module EQ Kit #	Keyboard EQ Kit #	Notes
PC500-B2,C2,B3,C3 Up to AY72710000	EQ-01495-01	EQ-01495-XX	1,2
PC500-B2,C2,B3,C3 After AY72710000	N/A	N/A	NO FCO Req'd

Note 1: If unit's CPU module has been replaced since June 1987, verification of need for CPU FCO should be done prior to implementation, as the CPU module may have already been upgraded.

Note 2: Variant determined by keyboard language. See chart on page 5, "EQ Kit # by Keyboard Variation".

EQ Kit # by Keyboard Variation

Order by FCO Kit#:	QTY	Part Number/Rev:	Description:
EQ-01495-01	1	54-17158-01 Rev A1	CPU module, V-E (CPU-V)
	1	36-19209-04	label strip, D
	1	36-19209-03	label strip, C
	1	36-19208-01	label strip, 1
EQ-01495-02	1	LK250-AA Rev D1	keyboard-English
EQ-01495-03	1	LK250-ED Rev D1	keyboard-Canadian Bilingual
EQ-01495-04	1	LK250-AC Rev D1	keyboard-Canadian/French
EQ-01495-05	1	LK250-AG Rev D1	keyboard-German
EQ-01495-06	1	LK250-AP Rev D1	keyboard-French
EQ-01495-07	1	LK250-AI Rev D1	keyboard-Italian
EQ-01495-08	1	LK250-AF Rev D1	keyboard-Finnish
EQ-01495-09	1	LK250-AD Rev D1	keyboard-Danish
EQ-01495-10	1	LK250-AN Rev D1	keyboard-Norwegian
EQ-01495-11	1	LK250-AM Rev D1	keyboard-Swedish
EQ-01495-12	1	LK250-AT Rev D1	keyboard-Hebrew
EQ-01495-13	1	LK250-AS Rev D1	keyboard-Spanish
EQ-01495-14	1	LK250-AK Rev D1	keyboard-Swiss French
EQ-01495-15	1	LK250-AL Rev D1	keyboard-Swiss German
FA-04789-01	1		documentation

Note 4: Keyboard EQ kits listed above DO NOT contain a CPU-V, P/N 54-17158-01, module. The CPU-V module must be ordered separately using EQ # indicated.

REWORK INSTRUCTIONS FOR FCO PC500-I001

NOTE:

During this FCO procedure, you will be referred to the VAXmate Service Guide (Revision 2, P/N EK-P500B-SV-002) for information, illustrations, and detailed procedures. Hereafter, the VAXmate Service Guide will be referred to as the VSG. For example, [VSG: 2.4 Extended Self-Test] refers you to VSG Section 2.4, entitled "Extended Self-Test", which you will find on page 2-22. References are to VSG Revision 2. If your VSG is at a different revision level, use the Table of Contents in the front of the VSG to locate the appropriate section.

A. PRE-FCO SYSTEM REVISION VERIFICATION

1. Run Extended Self Test
   [VSG: 2.4 Extended Self-Test]

2. Record information displayed upon completion:
   (This information will be needed later.)

   Presence of 80287 YES:____ _ NO: _____

   Keyboard version number (ex. LK250 02) _____. _

   CPU ROM revision date (ex. 07/31/86) ____/____/____

   Ethernet Address (ex. 08-00-...) __-__-__-__-__-__

NOTE:

Error 43 occurring during Extended Self-Test indicates the floppy motor drive test failed. The most likely cause is no diskette in the RX33 drive. If Error 43 occurs, ensure that a formatted floppy disk is in the RX33 drive and that the drive latch was down. Data on the disk will NOT be destroyed.

3. If the CPU ROM revision date is 07/31/86, proceed to Section B, "REMOVING CPU MODULE AND INSTALLING EQ-01495-01", on Page 8.

4. If the keyboard version number is 02, proceed to Section B, "REMOVING KEYBOARD AND INSTALLING EQ-01495-XX", on Page 10.

5. If the CPU ROM revision is later than 07/31/86 AND the keyboard version is higher than 02 there is no need to install this FCO. However, the unit should be labeled for future reference.

```
**********************************************
*                  CAUTION                   *
* AC POWER MUST BE REMOVED FROM THE SYSTEM   *
* BEFORE PROCEEDING.                         *
**********************************************
```

6. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

7. Unplug the power cable from the wall outlet.

8. Unplug the power cable from the rear of the VAXmate system unit.

9. Open the back door of the VAXmate system unit cover.
[VSG: 5.3.4 Opening the System Unit Back Door]
[VSG: 5.3.5 System Unit Back Door Removal]
[VSG: 5.3.6 System Unit Cover Removal]

10. Remove one "C" marker strip, P/N 36-19209-03, and one "1" marker strip, P/N 36-19209-01, from the FA-04789-01 package.

11. Affix these labels to the inside of the back cover directly underneath the yellow warning sticker. Do this so that they can be easily read from the rear with the door open.

12. You are done.

B. REMOVING CPU MODULE AND INSTALLING EQ-01495-01

1. Read VSG Section 5.2, "Before You Replace Any FRUs". This section details rules including:

****
* WARNING *
* USE a grounded wrist strap and a grounded *
* work surface. Static electricity can cause *
* damage to the printed circuit boards. *
****

****
* CAUTION *
* AC POWER MUST BE REMOVED *
* FROM THE SYSTEM *
* BEFORE PROCEEDING *
****

2. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

3. Unplug the power cable from the wall outlet.

4. Unplug the power cable from the rear of the VAXmate system unit.

5. Unplug all external cables.
[VSG: 5.3.1 Unplugging External Cables]

6. If present, separate the expansion box from the system unit.
[VSG: 5.3.2 Separating the Expansion Box from the System Unit]

7. Remove the back door and the VAXmate system unit cover.
[VSG: 5.3.4 Opening the System Unit Back Door]
[VSG: 5.3.5 System Unit Back Door Removal]
[VSG: 5.3.6 System Unit Cover Removal]

8. Remove the CPU board.
[VSG: 5.3.17 CPU Board Removal]

9. Open EQ Kit # EQ-01495-01 and remove new CPU board.

10. Swap the Ethernet address chip from the old CPU board to the new CPU board.
[VSG: Figure 5.33 CPU Board Components and Jumpers]

11. If present, swap the 80287 Coprocessor from the old CPU board to the new CPU board.
[VSG: Figure 5.33 CPU Board Components and Jumpers]

12. Install the new CPU board from EQ-01495-01.
[VSG: 5.3.18 CPU Board Installation]

13. Replace VAXmate system unit cover and back door.
(Follow the removal procedures in reverse order.)
[VSG: 5.3.6 System Unit Cover Removal]
[VSG: 5.3.5 System Unit Back Door Removal]
[VSG: 5.3.4 Opening the System Unit Back Door]

14. Check the keyboard version number, written down earlier, that was displayed upon completion of Extended Self-Test. If the keyboard version number is 02, proceed to Section C, "REMOVING KEYBOARD AND INSTALLING EQ-01495-XX", on Page 10.

15. If the keyboard version is higher than 02 there is no need to replace the keyboard. Proceed to Section D, Verifying FCO Installation, on Page 11.

C. REMOVING KEYBOARD AND INSTALLING EQ-01495-XX

NOTE:

The -XX variant required depends on keyboard language. See the Applicability Section, on Page 5 for details.

1. Read VSG Section 5.2, "Before You Replace Any FRUs". This section details rules including:

****
* WARNING *
* USE a grounded wrist strap and a grounded *
* work surface. Static electricity can cause *
* damage to the printed circuit boards. *
****

****
* CAUTION *
* AC POWER MUST BE REMOVED *
* FROM THE SYSTEM *
* BEFORE PROCEEDING *
****

2. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

3. Unplug the power cable from the wall outlet.

4. Unplug the power cable from the rear of the VAXmate system unit.

5. Unplug the keyboard cable from the system unit.

6. Connect the keyboard cable of the new keyboard to the system unit.

7. Proceed to Section D, " Verifying FCO Installation", on Page 11.

D. VERIFYING FCO INSTALLATION

1. DO NOT CONNECT THE POWER CORD UNTIL INSTRUCTED TO DO SO. Do not connect the Ethernet cable or any other external cables until instructed to do so.

2. If present, connect expansion box to system unit. Ensure that it is properly seated.

3. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

4. Plug the power cable into the rear of the VAXmate system unit.

5. Plug the power cable into the wall outlet.

6. Set the VAXmate power switch to the ON position (1 on the rocker switch is pushed in).

7. Verify that the Power-Up Test completes successfully. [VSG: 2.3 Power-Up Test]

8. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

9. Wait 15 seconds, then set the VAXmate power switch to the ON position (1 on the rocker switch is pushed in).

10. Run the Extended Self-Test. [VSG: 2.4 Extended Self-Test]

11. If no error occurs, proceed to Step 13.

12. If an error occurs, troubleshoot as usual using the VSG and tools such as the VAXmate Service Diagnostic. (Remember that Error 43 can be caused when there is no floppy in the RX33 drive.)

13. Compare the results displayed on the screen with the information written down prior to FCO installation. If the criteria below are met, proceed directly to Step 16. If the criteria are not met, proceed to Step 14 for corrective action.

- The current keyboard version number is 04 (or greater).
- The current CPU ROM revision is 06/18/87 (or later).
- The current Ethernet address matches the original.
- If an 80287 Coprocessor had been present, it is present now.

NOTE:

When an expansion box is installed, the lithium battery will not display as present until the Power-Up Test has been run twice.
[VSG 2.4.1.2 New Expansion Box]

14. Perform the following corrective action as required:

If the current keyboard version number is less than 04:

Check to ensure that you connected the keyboard from EQ-01495-XX. The keyboard should be marked Rev. D1 (or higher). Install another EQ-01495-XX if necessary.

If the current CPU ROM revision is prior to 06/18/87:

Check to see that you installed the CPU board from EQ-01495-01. The CPU board should be P/N 54-17158-01. Install another EQ-01495-01 if necessary.

If the the current Ethernet address does not match the original one:

Repeat Section B, "REMOVING CPU MODULE AND INSTALLING EQ-01495-01", on Page 8 in order to swap the Ethernet address chip as directed. If the original chip has been damaged, you must notify the Customer's System Administrator of the new (and old) Ethernet address so that the network information database can be updated.

If an 80287 Coprocessor had been present, but is not present now:

Repeat Section B, "REMOVING CPU MODULE AND INSTALLING EQ-01495-01", on Page 8 in order to swap the 80287 Coprocessor chip as directed. If the chip has been damaged, a new one must be installed.

15. Restart Section D, VERIFYING FCO INSTALLATION, on Page 11.

16. At this point, the criteria listed in Step 12 have been met.

17. Insert the VAXmate Service Diagnostic disk into the RX33 drive and press any key for it to boot.

18. Run one pass of the System Test to verify system operation. [VSG 2.5.5.2 System Test Requirements]

```
**********************************************
*                  CAUTION                   *
*        AC POWER MUST BE REMOVED            *
*        FROM THE SYSTEM                     *
*        BEFORE PROCEEDING                   *
*                                            *
**********************************************
```

19. Set the VAXmate power switch to the OFF position (0 on the rocker switch is pushed in).

20. Unplug the power cable from the wall outlet.

21. Unplug the power cable from the rear of the VAXmate system unit.

22. Open the back door of the VAXmate system unit cover.
[VSG: 5.3.4 Opening the System Unit Back Door]
[VSG: 5.3.5 System Unit Back Door Removal]
[VSG: 5.3.6 System Unit Cover Removal]

23. Remove one "D" marker strip, P/N 36-19209-04, and one "1" marker strip, P/N 36-19208-01, from the FA-04789-01 package.

24. Affix these labels to the inside of the back cover directly underneath the yellow warning sticker. Do this so that they can be easily read from the rear with the door open.

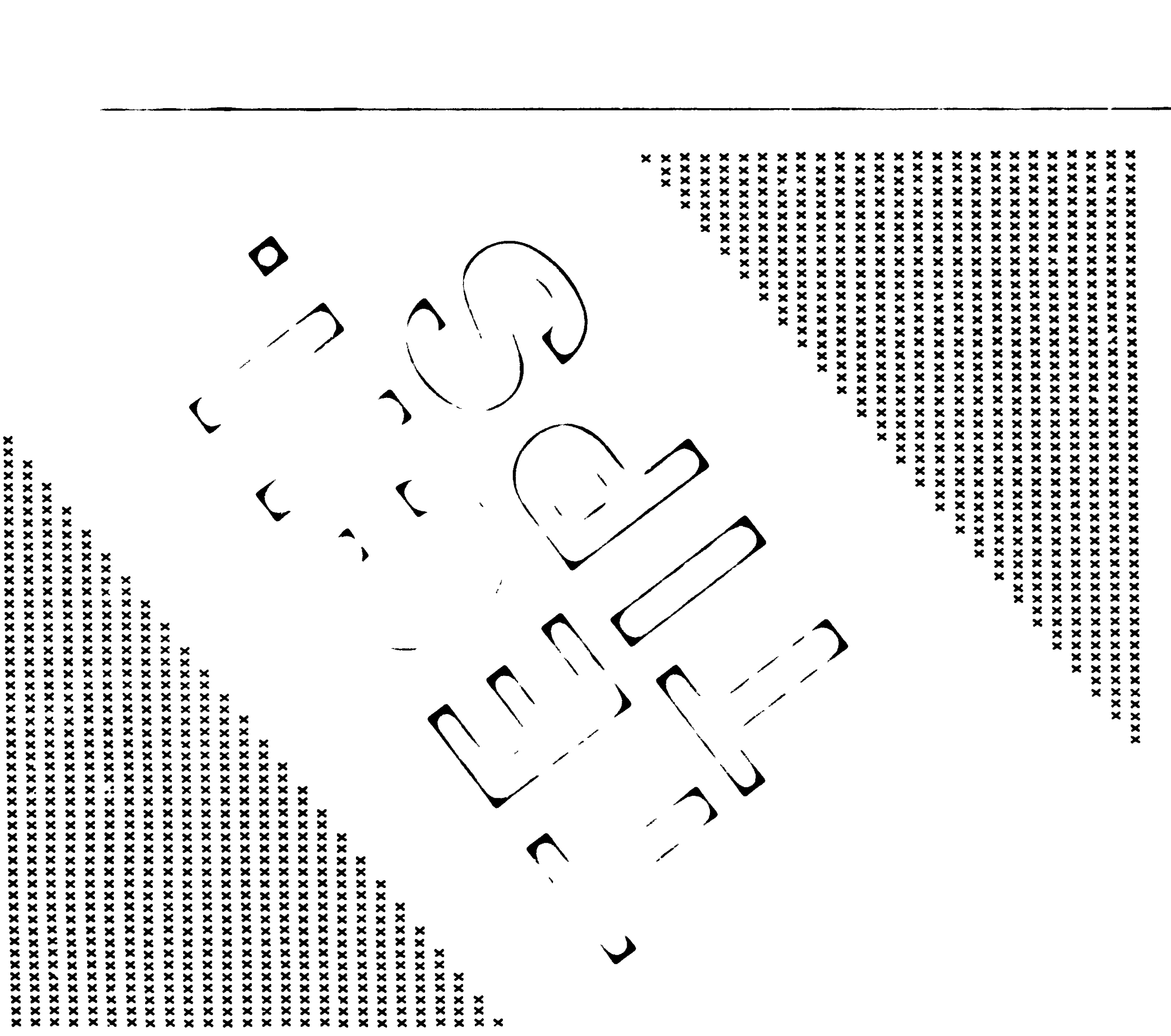
25. Tag replaced CPU module and keyboard with a Nonconforming Materials Tag stating "PC500-I001" in addition to other required information.

26. Pack the replaced CPU module and keyboard in the correct packaging from the EQ Kits before returning it to Logistics.

27. Ensure that a LARS report is submitted containing the following information:

	USA	GIA	EUROPE
Activity -			
Contract and Warranty	K	U	Y
Non Contract/Non Warranty	W	F	F
DEC Option	PC500	PC500	PC500
Type of Call	M	M	M
Action Taken	D	D	I
Fail Area-Module			
-FCO-Comments	PC500-I001	PC500-I001	PC500-I001
Material Used	EQ-01495-XX	EQ-01495-XX	EQ-01495-XX

28. Update Site Management Guide to reflect this FCO.



27-Oct-1987
PC500-INDEX.A
REV A

MICROMEDIA PUBLISHING

Tech Tip Index

Tech Tip Number	REV	Rel. Date	SB#	Title
-PC500--TT-01	A	27-Oct-87	504	RCD31/RCD32 differences

Field Service **TECH TIP**

digital

Category Systems Rev A

Title RCD31/RCD32 Differences

Option PC500

Cross Reference N/A

TECH TIP No PC500-TT-01

Problem/Solution

The RCD32-FA Expanison Box is a new 40 Mbyte option for the VAXmate (PC500). It has improved performance, storage capacity and reliability over the RCD31-EA Expansion Box. This Expansion Box is fan cooled. For consistency in manufacturing, the Personal Computing Systems Group has also added this fan implementation to the RCD31-EA and changed the model number to RCD31-FA.

Both the RCD31-FA and RCD32-FA differ from the RCD31-EA in that both -FA variants contain a fan cooling arrangement instead of convection cooling. This cooling arrangement includes a fan assembly, plastic, foam, and metal baffling. Round cables have replaced flat ribbon cables to allow for optimum air flow around the electronics throughout the entire Expansion-box. The hard disk power cable was lengthened to allow for routing around air baffles.

**** NOTE 1: The -EA option CANNOT be upgraded to an -FA level due to the amount of rework and expense involved. Attempts to do so in the field will violate FCC approval as well as cause improper air flow within the option.

**** NOTE 2: The two signal/data cables that attach the hard disk drive to the disk controller in the RCD31-FA and RCD32-FA are round cables. They may be used in the earlier RCD31-EA, however, the flat ribbon cables from the RCD31-EA MUST NOT be used in the -FA options because they will impede the air flow.

**** NOTE 3: The DC power cable that applies power to the hard disk drive on the RCD31-FA and RCD32-FA may be used on the earlier RCD31-EA. The RCD31-EA DC power cable MUST NOT be used on the new -FA options because it is too short for dependable operation.

Approvals		
Author William Robichaud	ESD&P TECH TIP Coordinator Bruce J. Conley	CSSE Greg Nealand
Author's Manager Greg Nealand		Field Service Product Safety
Release Date 27 October 1987		Revision A

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Category Systems Rev A

Title RCD31 'RCD32 Differences

Option PC500

TECH TIP No PC500-TT-01

PARTS LIST
==========

RCD31-EA	RCD31/32-FA	DESCRIPTION
RD31 -EA	N/A	PC500 unique 20MB Wini Drv
29-25527-00	N/A	RD31 Main PCB
N/A	RD32 -EA	PC500 42MB WINI DRIVE
N/A	29-262. 1-00	RD32 PCB BD
N/A	70-24499-01	0 Exp Box Fan Assy
17-00282-02	17-01577-01	RD Data Cable (20 Pin)
17-00286-02	17-01578-01	RD Data Cable (34 Pin)
17-00342-03	17-00342-06	RD Power Cable
RCD31-E	RCD32-E	RD Controller (30-25646-01)
H7271-	00-H7271-00	Power Regulator(54-16843-01)
54-16849-01	54-16849-01	Backplane Module Assembly
12-25871-01	12-25871-01	Expansion Box Power Conn
12-25512-01	12-25512-01	Lithium Battery/Cable Assy

DIAGNOSTICS
==========

****

* CAUTION *

Earlier revision diagnostics WERE NOT developed for the RD32 hard disk drive. The earlier revisions CAN CORRUPT customer data files.

****

The Field Service Diagnostics for the VAXmate system and options are on floppy media in the VAXmate Maintenance Kit (part number 88-26882-M7). The latest revision of the diagnostic diskette must be used.

The correct label on the diagnostic diskette to be used reads as follows:

****
* BN-HD93C-Y7 *
* VAXMATE SERVICE DIAG. V1.2 *
****

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Category Systems Rev A

Title RCD31 RCD32 Differences

Option PC500

TECH TIP No PC500-TT-01

The VAXmate -FA model expansion boxes have the identical low profile, footprint and mounting features as the -EA model expansion box option.

Optional -FA Expansion Box

- o Approximately 2H" X 12W" X 15D" with a rectangular form factor
- o No AC power cord -- receives DC power from the system unit
- * o Half-height hard disk drive and controller
- ** o Two "IBM AT Form Factor" option module slots
- o Battery backup for system unit internal timer
- o Power status LED (Green) visible through louvers on left side
- o Fan cooled arrangement

* 20MB half-height hard disk drive in RCD31-FA
* 40MB half-height hard disk drive in RCD32-FA

** CAUTION: Never install Option Boards that exceed the available expansion box wattage. A single option or combination of options that requires more than 19 watts can DAMAGE or SHUT DOWN the expansion box circuitry, blow a fuse in the Workstation, or damage the Vaxmate Workstation power supply.

LARS REPORTING (Example)

System Type: PC500-BA

System Serial Number: TA63830001

Option T pe: RCD32-FA

Option Serial Number: 01767

Both system and option numbers must be filled in properly in order to attain the correct level of data for use by various Corporate groups.

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PC500-TT-✓